M-98V

SERVICE MANUAL

Ver 1.0 1999. 03

US Model
Canadian Model
AEP Model
E Model
Tourist Model

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MZ-98-100

SPECIFICATIONS

Tape
MICROCASSETTE™ (normal position type)
Recording system
2-track 1 channel monaural
Frequency range
400 - 3,000 Hz (2.4 cm/s)
Speaker
Approx. 2.8 cm (1 1/8 in.) dia.
Power output
250 mW
Input
Microphone input jack (minijack/plug in power) sensitivity 0.37 mV for 3 kilohms or lower impedance microphone
Output
Earphone jack (minijack) for 8 - 300 ohms earphone
Power requirements
3 V DC batteries R03 (size AAA) × 2/External DC 3 V power sources

Battery life (Approximate hours) (EIAJ*)

Battery	Recording
Sony alkaline LR03 (SG)	9.5
Sony R03 (SB)	3.5

* Measured value by the standard of EIAJ (Electronic Industries Association of Japan). (Using a Sony Microcassette tape)

For maximum performance, we recommend that you use alkaline batteries.

Dimensions (w/h/d) (incl. projecting parts and controls)
Approx. 60.5 × 93.9 × 26.0 mm (2 1/2 × 3 3/4 × 1 11/16 in.)
Mass
Approx. 130 g (4.6 oz.)
Supplied accessories
Remote control microphone ECM-J805 (1)
Microcassette tape MC-30 (1)
Earphone MDR-E123 (1)
Carrying case (1)
Hand strap (1)
Batteries R03 (SB) (2) (Tourist model only)

Design and specifications are subject to change without notice.

MICROCASSETTE™-CORDER

MICROFILM

SONY®

TABLE OF CONTENTS

1. SERVICE NOTE 3

2. GENERAL 4

3. DISASSEMBLY

3-1. Panel (Rear) Assy 5
3-2. Panel (Lid) Assy 5
3-3. MD Block Assy 6
3-4. Main board, complete 6
3-5. Frame 7
3-6. Mode Motor Block 7

4. MECHANICAL ADJUSTMENTS 8

5. ELECTRICAL ADJUSTMENTS 8

6. DIAGRAMS

6-1. IC Pin Description 10
6-2. Block Diagram 12
6-3. Printed Wiring Board 14
6-4. Schematic Diagram 17

7. EXPLODED VIEWS

7-1. Panel (Lid) Section 22
7-2. Main Board Section 23
7-3. Mechanism Section (1) 24
7-4. Mechanism Section (2) 25

8. ELECTRICAL PARTS LIST 26

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
SERVICE NOTE

This set uses the photo reflector PH701 to detect the rotation of the gear. PH701 is on the main board and so removal of the main board does not allow the set to detect the rotation of the gear. This makes motor control impossible which prevents normal operation.
When repairing the set as energized with the main board removed, proceed as follows:

• Service the Main Board

1. Short the BP701 (SERVICE) on the main board. (see the Fig. 1.)
2. Refer to the “SECTION3 DISASSEMBLY” (page 5) and open the main board.
3. Put a tape in the set.
4. Fixed at S703 (TAPE DET) on mode or connect the jumper wire between TP38 and GND (TP66).
5. Supply 3 V DC to the battery terminals.
6. Rotate the S701 (MODE SELECT) one turn by hand (mode sensor).
7. Press the desired operating switch (◄ ►, FF, etc.).
8. Check the mode on the liquid crystal panel. Use item 6 repeatedly to switch modes.
9. When finished with the job, disconnect the power and open (remove the short) the BP701 (SERVICE).

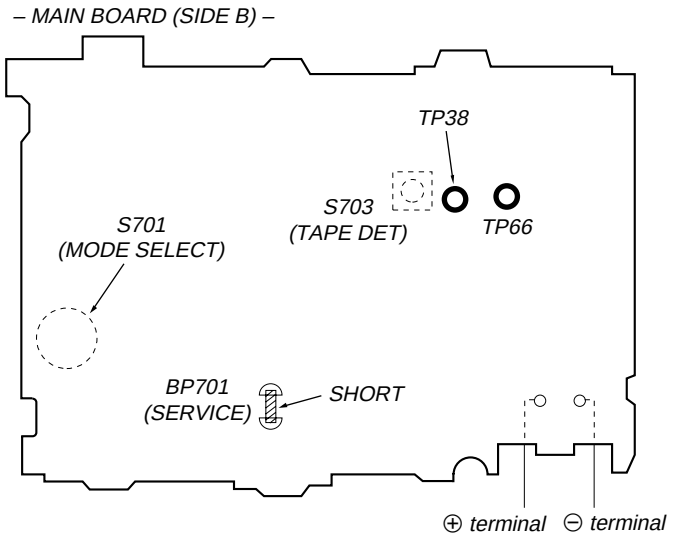
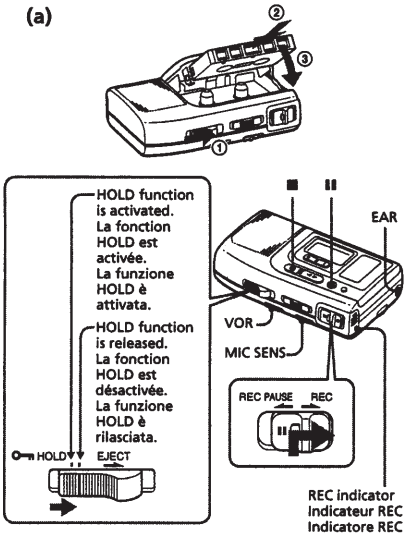


Fig. 1.

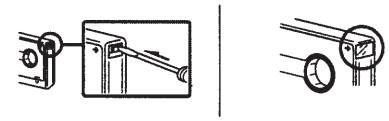
This section is extracted from instruction manual.

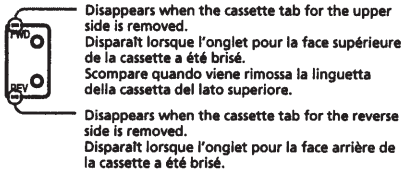
B

(a)



(b)





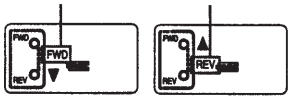
Disappears when the cassette tab for the upper side is removed.
Disparaît lorsque l'onglet pour la face supérieure de la cassette a été brisé.
Scompare quando viene rimossa la linguetta della cassetta del lato superiore.

Disappears when the cassette tab for the reverse side is removed.
Disparaît lorsque l'onglet pour la face arrière de la cassette a été brisé.
Scompare quando viene rimossa la linguetta della cassetta del lato opposto.

Flashes if you try to record with the cassette tab removed.
Clignote si vous essayez d'enregistrer alors que l'onglet a été brisé.
Lampeggia se si cerca di registrare dopo aver rimosso la linguetta della cassetta.

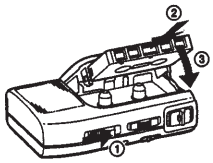
(c)

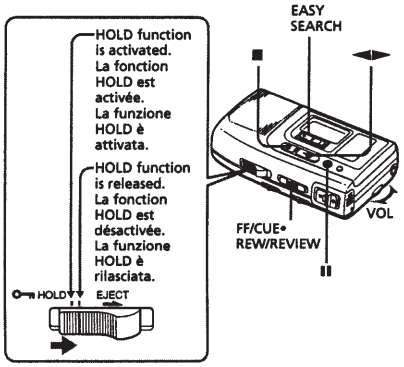
Side to start recording
Face de début d'enregistrement
Lato di inizio della registrazione



C

(a)





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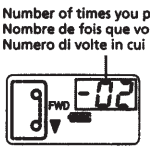
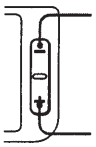
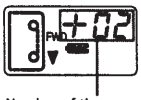


Number of times you pressed –
Nombre de fois que vous avez appuyé sur –.
Numero di volte in cui si è premuto –.



Each time you press –, you can locate recording approx. 3 seconds before.
Chaque fois que vous appuyez sur –, vous pouvez localiser un enregistrement approx. 3 secondes avant.
Ogni volta che si preme –, è possibile riavvolgere il nastro registrato di circa 3 secondi.

Each time you press +, you can locate recording approx. 10 seconds ahead.
Chaque fois que vous appuyez sur +, vous pouvez localiser un enregistrement approx. 10 secondes plus loin.
Ogni volta che si preme +, è possibile fare avanzare il nastro registrato di circa 10 secondi.



Number of times you pressed +
Nombre de fois que vous avez appuyé sur +.
Numero di volte in cui si è premuto +.

► *Operating the Unit*

Recording (see Fig. B-(a))

You can record right away with the built-in microphone.

1 Slide HOLD/EJECT in the direction of the arrow and open the lid.
2 Take out any slack in the tape and insert the cassette with the side to start recording facing the lid.
Note
Make sure that the tabs are not removed.
3 Close the cassette compartment lid until it clicks.
4 Make sure that the HOLD function is released. If HOLD/EJECT is set to ⊶, slide HOLD/EJECT to the next position.
5 Set VOR to OFF. For details, refer to "VOR (Voice Operated Recording)".
6 Select the microphone sensitivity by setting MIC SENS to H or L.
H (high): To record at meetings or in a quiet and/or spacious place.
L (low): To record for dictation or in a noisy place.
7 Slide REC PAUSE/REC toward "REC" while holding the center button down.
The REC indicator lights and "REC" appears in the display window and the REC PAUSE/REC button automatically returns to the center position. While recording, the REC indicator flickers depending on the strength of the sound.

If you start recording from the upper side ("FWD" appears in the display window), recording automatically goes on to the reverse side ("REV" appears in the display window) and the unit turns off automatically when the tape comes to the end of the reverse side.

To	Press or slide
Stop recording	■
Pause recording	Slide REC PAUSE/REC toward "PAUSE"*, or press the ❚❚ button. "❚❚" appears and the tape counter flashes in the display window.
Release pause recording	Slide REC PAUSE/REC toward "REC" while holding the center button down*, or press the ❚❚ button. "❚❚" in the display window goes off.
Take out a cassette	Press ■ and slide HOLD/EJECT in the direction of the arrow.

* When you release the REC PAUSE/REC button after you have slid it toward "REC" or "PAUSE", the button returns to the center position.

Notes
- Before taking out the cassette, make sure that the sound of the unit operating has stopped.
- When an external microphone is connected to the MIC jack, the built-in microphone does not work.

When you open the lid during stop
The tape always starts recording from the upper side after you have opened the lid.

To monitor the sound
Connect an earphone (supplied) firmly to EAR.

To prevent a tape from being accidentally recorded over (see Fig. B-(b))
Break out and remove the cassette tabs. To reuse the cassette for recording, cover the tab hole with adhesive tape.
When the cassette tab is removed, the bar in the display window disappears.

To select the side to be recorded
To record on both sides continuously
1 Insert a cassette with the side to start recording facing the lid.
2 Start recording on the upper side ("FWD" appears in the display window). (see Fig. B-(c))
If "REV" is displayed, press ■ for more than 2 seconds to display "FWD."
When recording reaches the end of the upper (forward) side, it will automatically go on to the reverse side. When recording reaches the end of the reverse side, it will automatically stop.

Notes
- Make sure the tabs on both sides are not removed.
- Even if only the tab on the reverse side is removed, recording cannot be made.
- When recording on both sides, recording will not be made for a few seconds while the tape is switching sides.

To Record on one side only
1 Insert a cassette with the side to start recording facing away from the lid (reverse side).
2 Start recording on the reverse side ("REV" appears in the display window). (see Fig. B-(c))
If "FWD" is displayed, press ■ for more than 2 seconds to display "REV."
When recording reaches the end of the reverse side, it will automatically stop.

Note
Make sure the tab on the reverse side is not removed.

Playing a Tape (see Fig. C-(a))

1 Slide HOLD/EJECT in the direction of the arrow and open the lid.
2 Take out any slack in the tape and insert the cassette with the side to start playing facing the lid.
3 Make sure that the HOLD function is released. If HOLD/EJECT is set to ⊶, slide HOLD/EJECT to the next position.
4 Close the cassette compartment lid until it clicks.
5 Press ◄❚►.
6 Adjust the volume using VOL.

If the playback starts from the upper side ("FWD" appears in the display window), playback goes on to the reverse side ("REV" appears in the display window) and the unit turns off automatically.

To	Press or slide
Stop playback	■
Pause playback	❚❚ "❚❚" appears and the tape counter flashes in the display window.
Release pause playback*	Press the ❚❚ or ◄❚► button. "❚❚" in the display window goes off.
Fast forward**	Slide FF/CUE•REW/REVIEW toward FF/CUE during stop.
Rewind**	Slide FF/CUE•REW/REVIEW toward REW/REVIEW during stop.
Fast forward while listening to the sound (CUE)	Slide and hold FF/CUE•REW/REVIEW toward FF/CUE during playback.
Rewind while listening to the sound (REVIEW)	Slide and hold FF/CUE•REW/REVIEW toward REW/REVIEW during playback.
Play the other side during playback	◄❚►
Play the other side during stop	■ for more than 2 seconds
Take out a cassette	Press ■ and slide HOLD/EJECT in the direction of the arrow.

* The ❚❚ button is released automatically when the ■ button is pressed (stop-pause-release function).
** The tape stops at the end of the tape and the power is turned off automatically (automatic shut-off mechanism).

Note
Before taking out the cassette, make sure that the sound of the unit operating has stopped.

When you open the lid during stop
The tape always starts playback from the upper side after you have opened the lid.

To increase the playback speed
Slide the FAST PB switch in the direction of the arrow. The playback speed will be increased.
To return to the original speed, slide the FAST PB switch to the original position.

Note
While recording, the fast playback function does not work.

Searching for the point you want to play (see Fig. C-(b))
When you press EASY SEARCH – or + during playback or stop, the unit enters rewind or fast forward mode and stops, then starts playback.
Each press of the – button rewinds the tape to the point approx. 3 seconds earlier and plays it back.
Each press of the + button makes the tape run rapidly to the point approx. 10 seconds ahead and plays it back.
You can press the – or + button up to 20 times (approx. 60 seconds earlier or 200 seconds ahead). (If you press and hold the button, the digits change rapidly.)

Note
When you press EASY SEARCH during recording, the unit stops recording and starts playback after fast-forwarding or rewinding for as much as you pressed the button.

SECTION 3
DISASSEMBLY

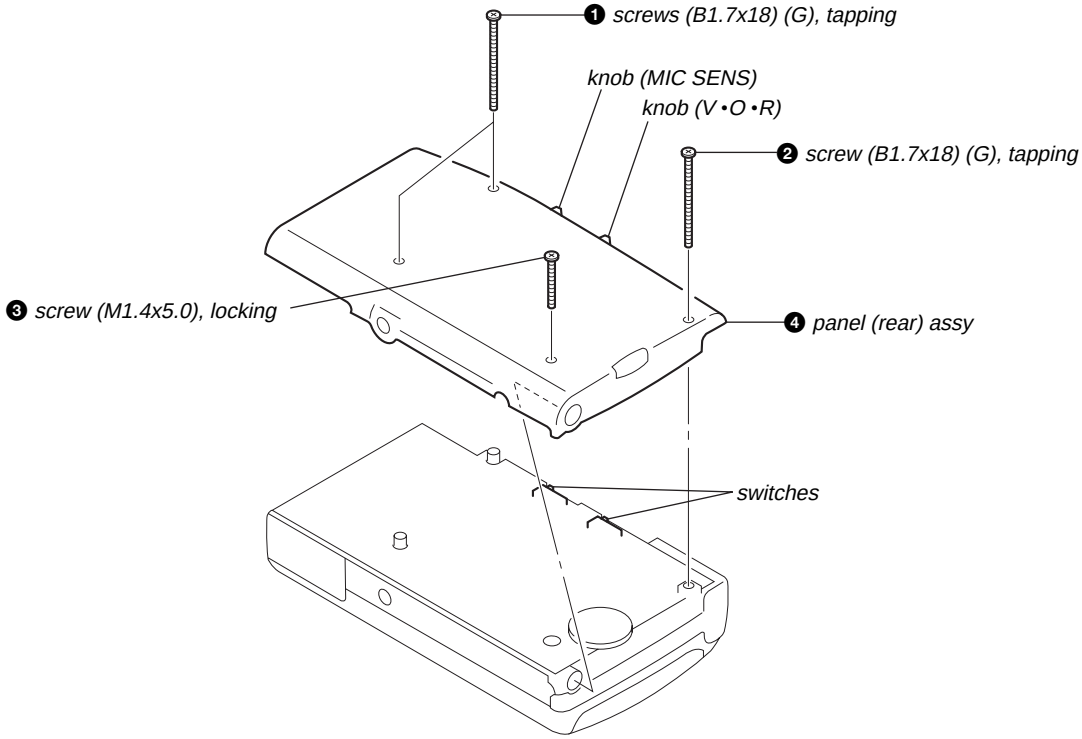
Note : This set can be disassemble according to the following sequence.

Set → Panel (rear) assy → Panel (lid) assy → MD block assy → Main board, complete → Frame → Mode motor block

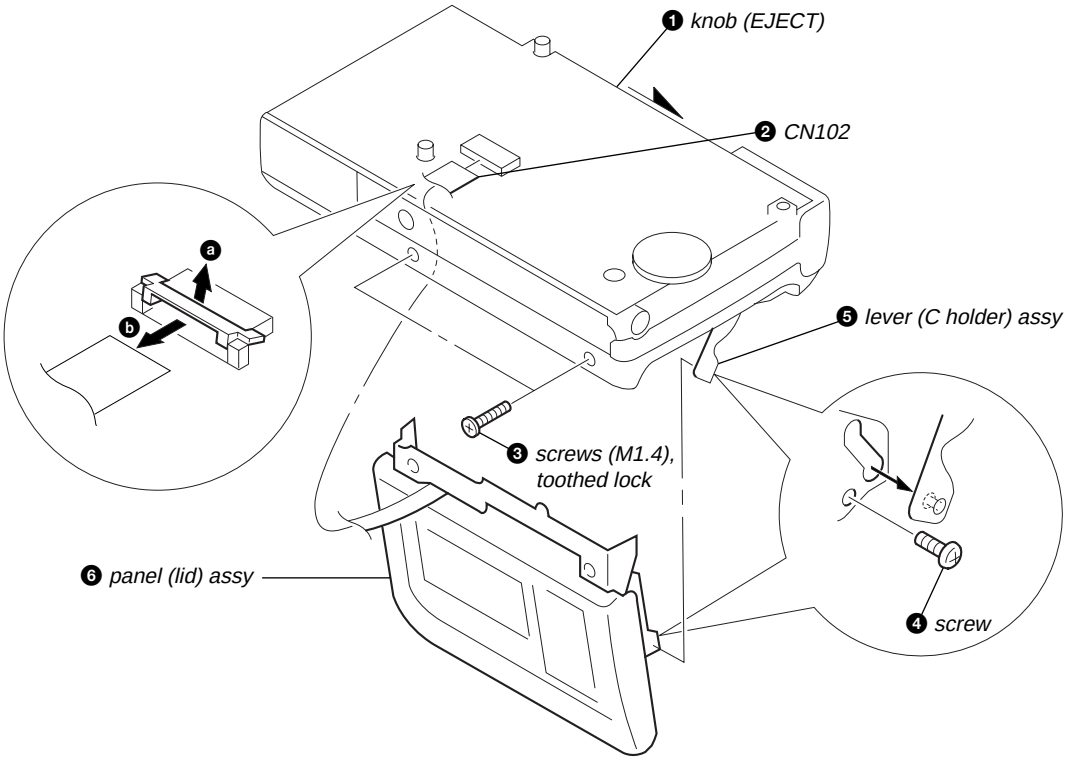
Note : Follow the disassembly procedure in the numerical order given.

3-1. PANEL (REAR) ASSY

• When installing, position the knobs (V•O•R, MIC SENS) and the switches.

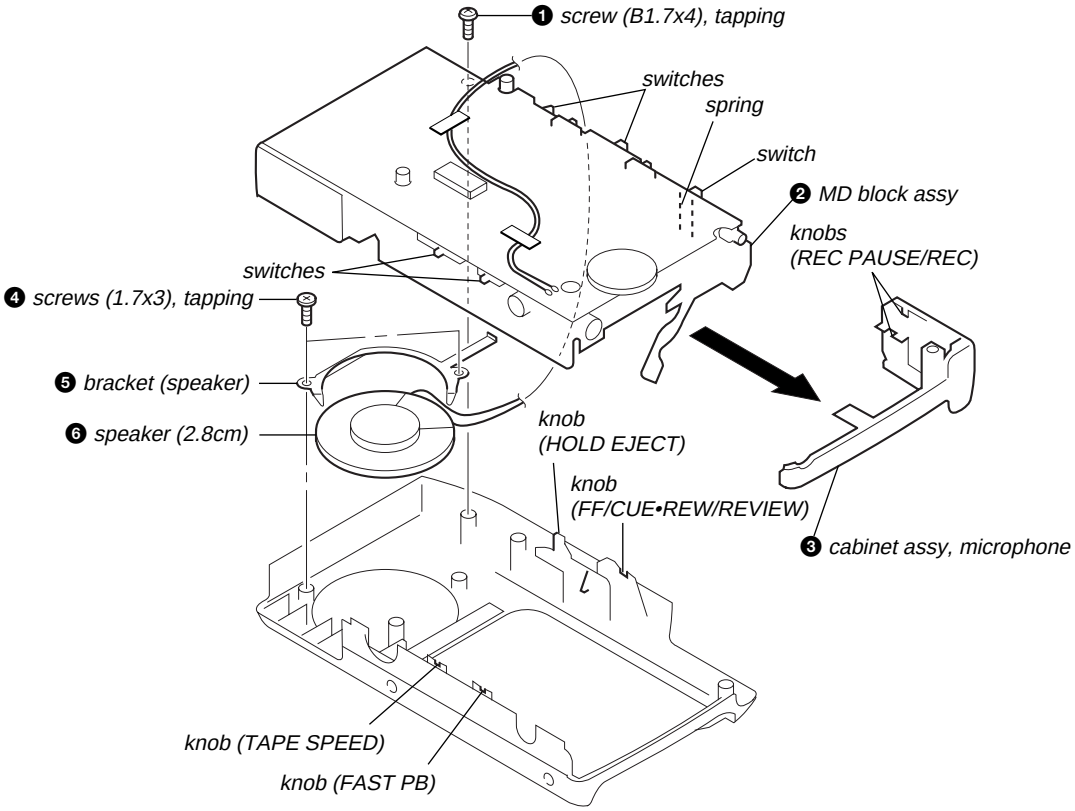


3-2. PANEL (LID) ASSY



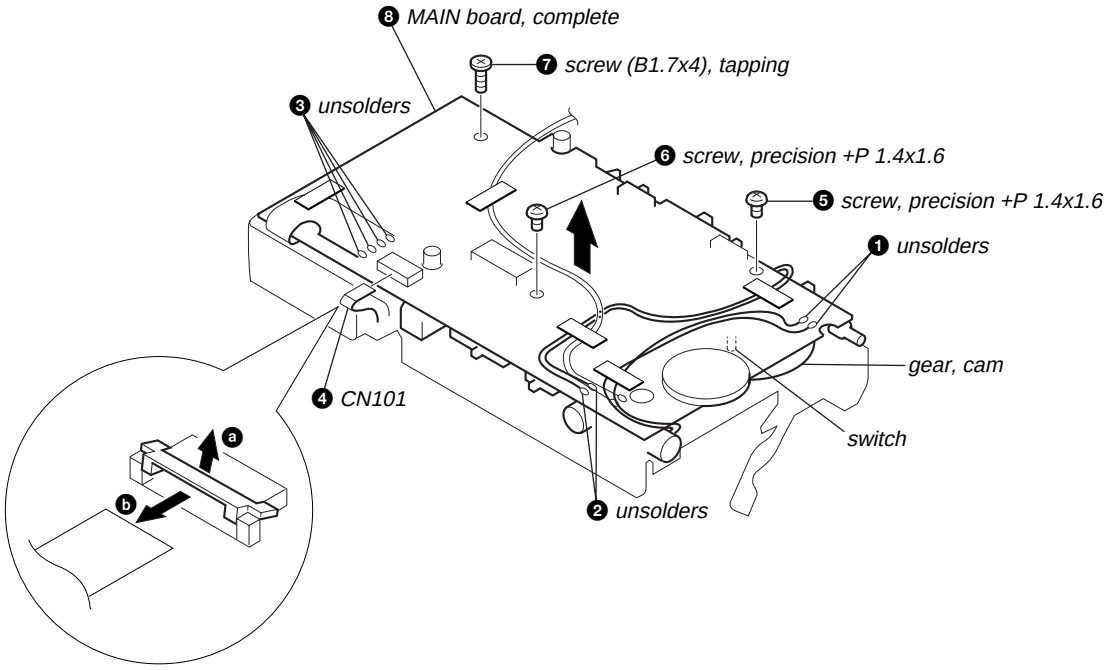
3-3. MD BLOCK ASSY

• When installing the MD block assy, position the knobs with the switches.
• When installing the microphone cabinet assy, align the knobs with the spring and switches.



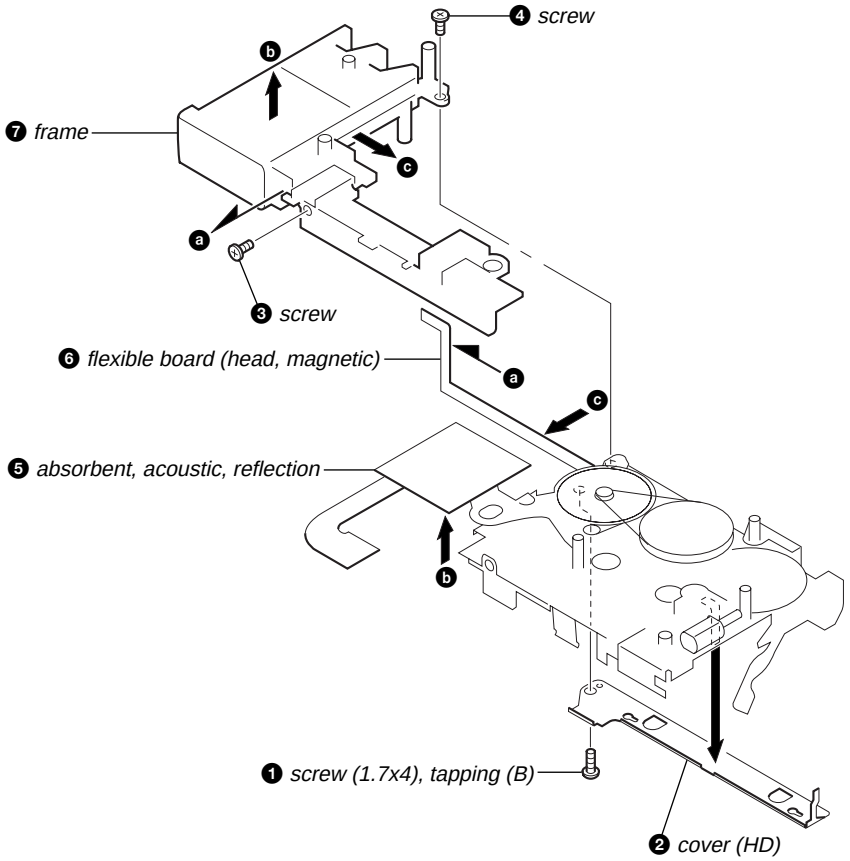
3-4. MAIN BOARD, COMPLETE

• When installing, position the cam gear with the switch.

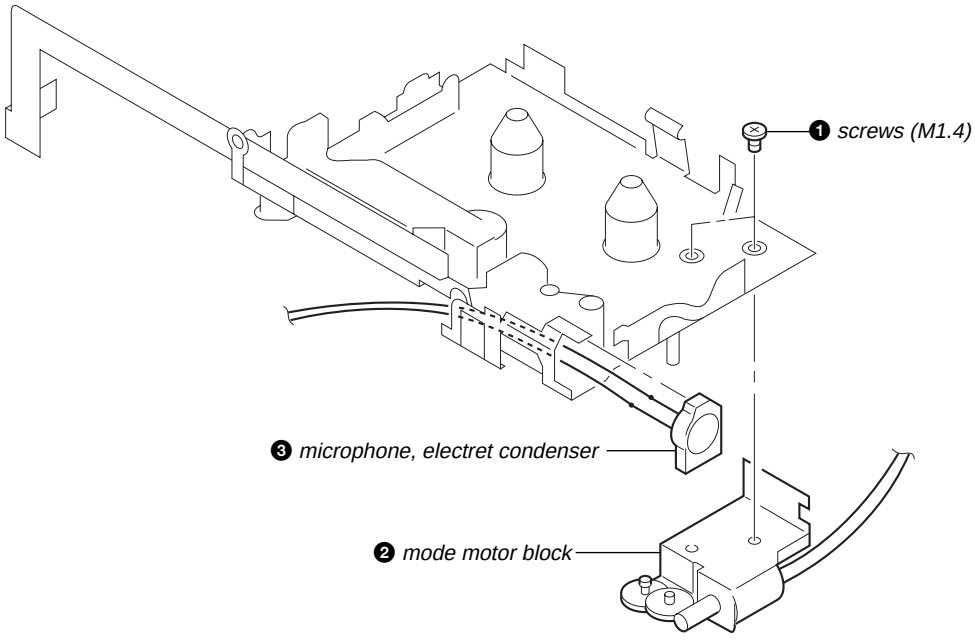


3-5. FRAME

• Be careful not to damage the flexible board.
• Remove from ⓐ to ⓑ to ⓒ.



3-6. MODE MOTOR BLOCK



SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Before adjusting, clean the following parts with a piece of cotton moistened with alcohol.
   record/playback/erase head pinch roller
   rubber belt capstan
2. Demagnetize the record/playback/erase head using a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for adjustments.
4. After adjusting, apply screw-locking compound to the adjusted parts.
5. Unless specified otherwise, use a specified voltage (2.5 V DC) to perform the adjustments.

Torque Measurement

TAPE SPEED switch : 2.4cm/s

Mode	Torque Meter	Meter Reading
FWD, REV	CQ-103M	5 – 10 g • cm (0.07 – 0.13 oz • inch)
FF, REW	CQ-201M	more than 15 g • cm (more than 0.209 oz • inch)

Tape Tension Measurement

TAPE SPEED switch : 2.4cm/s

Mode	Torque Meter	Meter Reading
FWD	CQ-403M	more than 15 g (more than 0.53 oz)

SECTION 5
ELECTRICAL ADJUSTMENTS

Standard Input Level

Input terminal	MIC (PLUG IN POWER) jack
Source impedance	300 Ω
Input level	0.77 mV (–60 dB)
Frequency	1 kHz

Standard Output Level

Output terminal	EAR jack
Load impedance	10 kΩ
Output level	78 mV (–20 dB)

Test Tape

Type	Signal	User for
S-2-A030	3 kHz, –20 dB	Azimuth Adjustment
WS-24	3 kHz, –10 dB	Tape Speed Adjustment

0 dB = 0.775 V

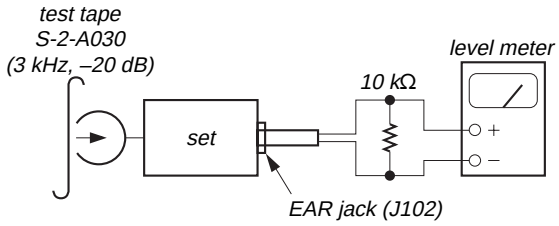
PRECAUTION

• Switch and control position
  VOL control : 5 (Mechanical center)
  TAPE SPEED switch : 2.4cm/s
  V•O•R switch : OFF
  FAST PB switch : OFF
  MIC SENS switch : H

Record/Playback/Erase Head Azimuth Adjustment

Procedure :

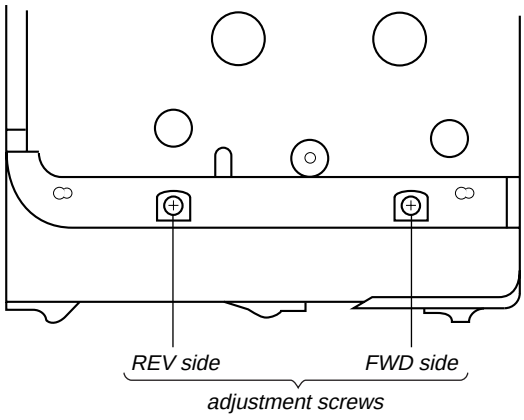
– FWD/REV playback –



• Rotate the screw to adjust level meter reading to the maximum.

Note : Adjust to the maximum peak though there may be two or three peaks.

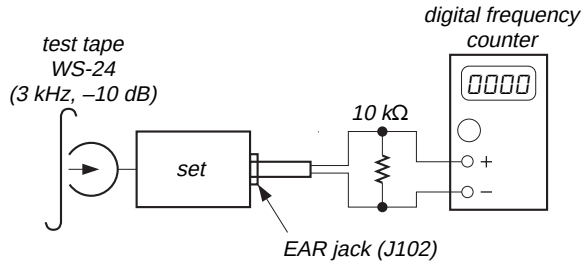
Adjustment Location :



Tape Speed Adjustment

Procedure :

After adjusting the 2.4cm/s speed, adjust the 1.2cm/s speed.
– FWD/REV playback –



1. Tape Speed : 2.4cm/s/FWD
   Playback WS-24 (tape center part) and adjust RV601 so that reading on the digital frequency counter becomes 3,000 Hz.
2. Tape Speed : 1.2cm/s/FWD
   Playback WS-24 (tape center part) and adjust RV601 so that reading on the digital frequency counter becomes 1,500 Hz.

Specification Value :

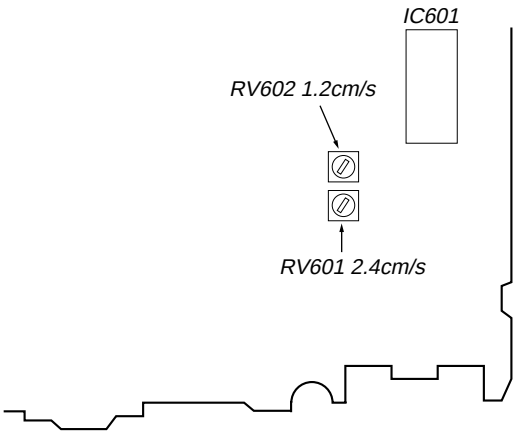
Adjustment part	Tape speed	Frequency counter
RV601	2.4cm/s	2,985 – 3,045 Hz
RV602	1.2cm/s	1,470 – 1,530 Hz

3. Tape Speed : 2.4cm/s/REV
   Playback WS-24 (tape center part) in the REV state.
   Check that digital frequency counter reading is within ± 2% of reading of step 1.
4. Tape Speed : 1.2cm/s/REV
   Playback WS-24 (tape center part) in the REV state.
   Check that digital frequency counter reading is within ± 2% of reading of step 2.

2.4cm/s : 60 Hz
1.2cm/s : 30 Hz

Adjustment Location : main board

– MAIN BOARD (SIDE B) –



SECTION 6
DIAGRAMS

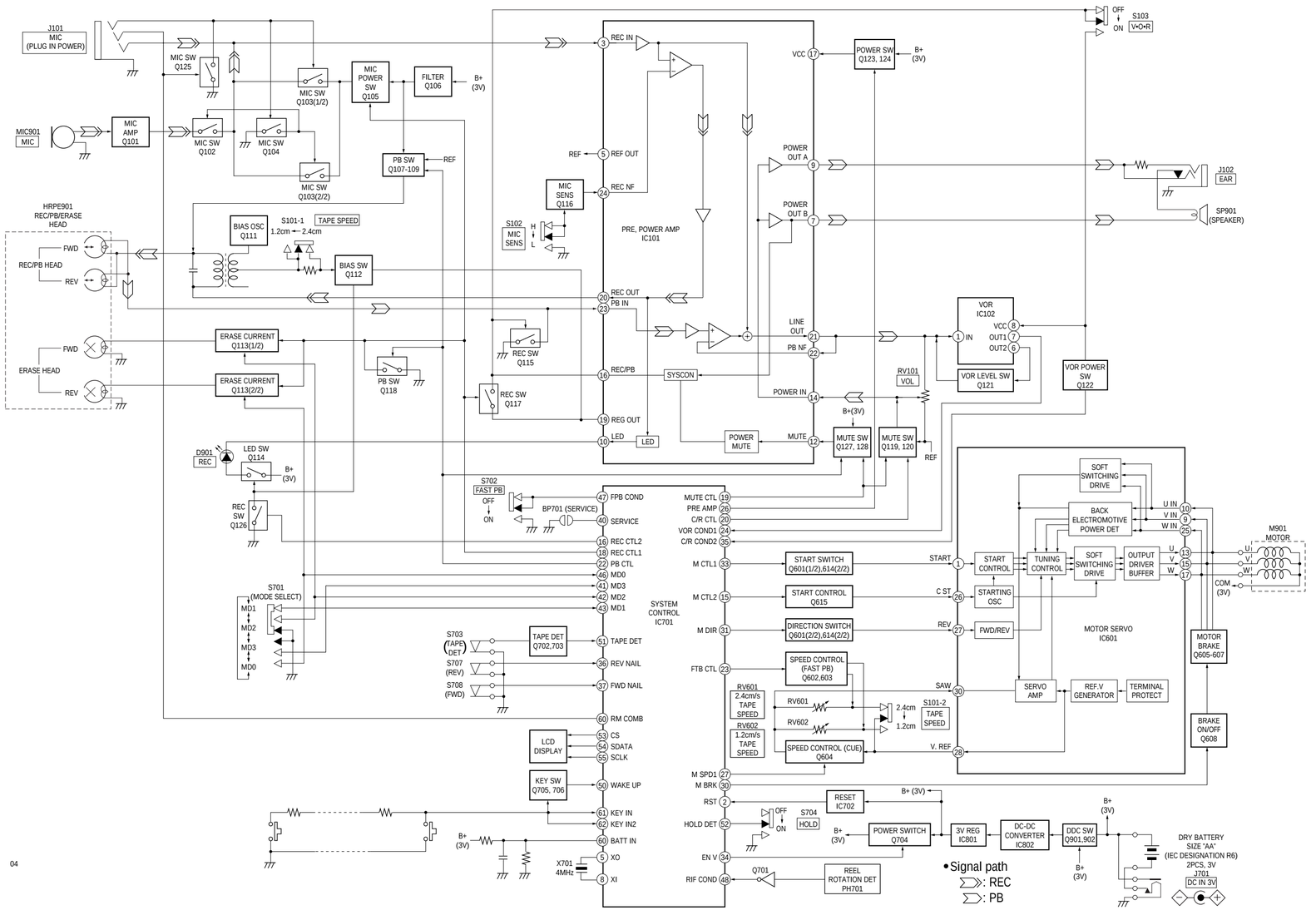
6-1. IC PIN DESCRIPTION

• IC701 MB89133LPFV-G-488BND (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Description
1	AVCC	—	Power supply pin. (+3 V)
2	RST	I/O	Reset signal input/output. Reset signal input: “L”, Software reset signal output: “L”
3	MOD 0	—	Not used. (Connect to ground.)
4	MOD 1	—	Not used. (Connect to ground.)
5	X 0	I	Clock oscillator crystal connect pin (4 MHz). Main clock crystal oscillator signal input.
6	NC	—	Not used. (Open)
7	NC	—	Not used. (Open)
8	X 1	O	Clock oscillator crystal connect pin (4 MHz). Main clock crystal oscillator signal output.
9	VCC	—	Power supply pin. (+3 V)
10	XDA	—	Not used. (Connect to ground.) (Sub clock oscillation output.)
11	NC	—	Not used. (Open)
12	NC	—	Not used. (Open)
13	XIA	—	Not used. (Open) (Sub clock oscillation signal output.)
14	SUBM BRK	O	Set-up motor brake control signal output. “H”: Brake on
15	M CTL 2	O	Servo start frequency control signal output. “H”: Frequency down
16	REC CTL 2	O	Bias and LED power control signal output. “H”: Bias and LED on
17	NC	—	Not used. (Open)
18	REC CTL 1	O	Record mode select and microphone power control signal output. “L”: REC and microphone on
19	MUTE CTL	O	IC101 (CX1347N) audio mute signal output. “H”: Mute on
20	C/R CTL	O	CUE/REVIEW mute control signal output. “H”: Mute on
21	NC	—	Not used. (Open)
22	PB CTL	O	REC/PB switch signal output. “H”: Playback mode
23	FPB CTL	O	FAST PB servo control signal output. “H”: FAST PB on
24	VOR COND1	I	VOR IC (IC102: NJM2072M) detect signal output. “L”:VOR on (Motor stop)
25	VSS	—	Ground
26	PRE AMP	O	IC101 (CX1347N) power control signal output. “H”: Power on
27	M SPD	O	Motor speed control signal output (CUE increase speed). “H”: Increase speed
28	NC	—	Not used. (Open)
29	SUBM CTL	O	Set-up motor control signal output. “H”: Motor on
30	M BRK	O	BSL motor brake control signal output. “H”: Brake on
31	M DIR	O	BSL motor rotate direction control signal output. “H”: CCW, “L”: CW
32	NC	—	Not used. (Open)
33	M CTL 1	O	BSL motor ON/OFF control signal output. “H”: Motor on
34	EN V	O	System peripheral power control signal output. “L”: Power on
35	VOR COND2	I	VOR IC (IC102: NJM2072M) power detect signal input. “L”: Power on
36	REV NAIL	I	REV claw detect signal input. “L”: With REV claw
37	FWD NAIL	I	FWD claw detect signal input. “L”: With FWD claw
38	NC	—	Not used. (Open)
39	NC	—	Not used. (Open)
40	SERVICE	I	Service mode detect signal input. “L”: Service mode
41	MD 3	I	MD 3 position detect signal input. “L”: MD 3
42	MD 2	I	MD 2 position detect signal input. “L”: MD 2
43	MD 1	I	MD 1 position detect signal input. “L”: MD 1
44	NC	—	Not used. (Open)
45	NC	—	Not used. (Open)
46	MD 0	I	MD 0 position detect signal input. “L”: MD 0
47	FPB COND	I	FAST PB mode detect signal input. “L”: FAST PB mode
48	RIF COND	I	Reflector signal detect signal input. “L”: Edge input
49	NC	—	Not used. (Open)
50	WAKE UP	I	Microcomputer start-up signal input by key input (H edge input).

Pin No.	Pin Name	I/O	Pin Description
51	TAPE COND	I	Tape detect signal input. “H”: With tape and microcomputer start-up at H edge input.
52	HOLD COND	I	Hold detect signal input. “L”: Hold on
53	CS	O	LCD driver chip select signal output. “H”: Data transfer
54	SDATA	O	LCD driver serial data signal output.
55	SCLK	O	LCD driver serial clock signal output.
56	NC	—	Not used. (Open)
57	AVSS	—	A/D converter ground pin.
58	NC	—	Not used. (Open)
59	AVR	—	A/D converter reference voltage.
60	RM COND	I	Remote control microphone plug, pause detect signal input. (Analog voltage)
61	KEY IN	I	Key input data signal. (Analog voltage)
62	KEY IN 2	I	Key input data signal. (Analog voltage)
63	BATT IN	I	Power voltage level signal input. (Analog voltage)
64	NC	—	Not used. (Open)

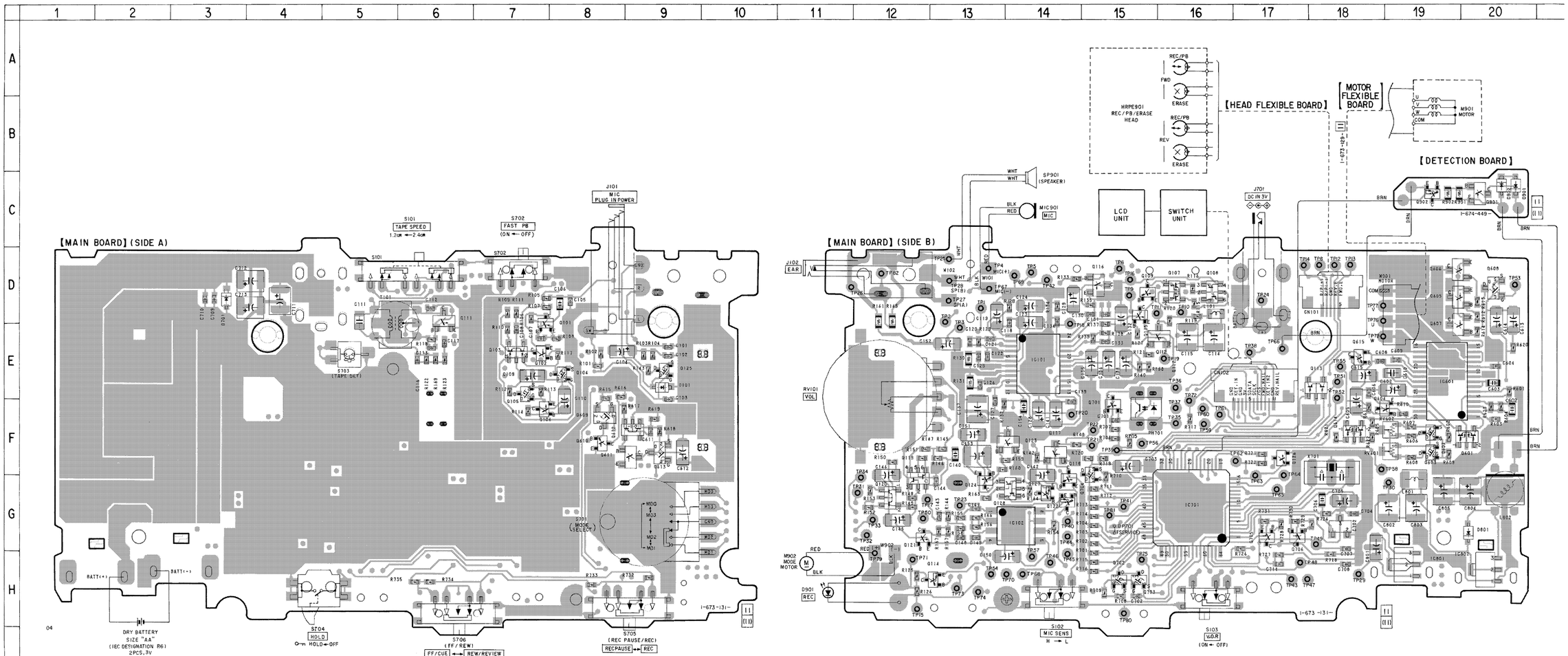
6-2. BLOCK DIAGRAM



6-3. PRINTED WIRING BOARD

• **Semiconductor Location**

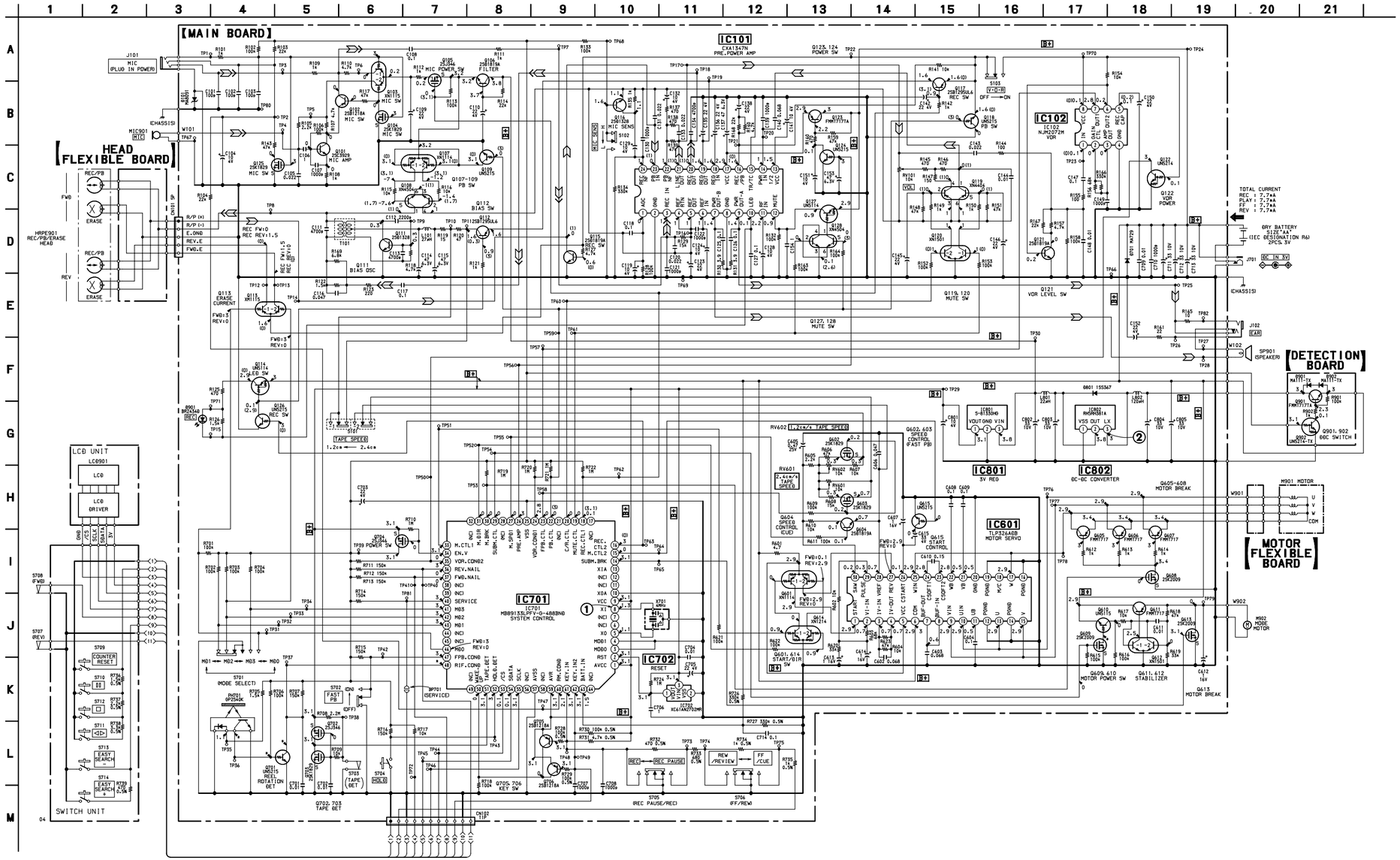
Ref. No.	Location
D101	E-9
D701	D-3
D801	G-19
D901	H-11
IC101	E-14
IC102	G-14
IC601	E-19
IC701	G-16
IC702	G-18
IC801	H-19
IC802	G-19
PH701	F-15
Q101	D-8
Q102	E-7
Q103	E-7
Q104	E-8
Q105	E-7
Q106	F-7
Q107	D-16
Q108	D-16
Q109	D-15
Q111	D-6
Q112	E-15
Q113	E-17
Q114	H-12
Q115	E-15
Q116	D-15
Q117	F-14
Q118	F-14
Q119	F-12
Q120	G-12
Q121	G-12
Q122	G-14
Q123	F-14
Q124	G-13
Q125	E-9
Q126	F-17
Q127	G-14
Q128	G-13
Q601	F-19
Q602	F-19
Q603	F-19
Q604	E-18
Q605	D-19
Q606	D-19
Q607	D-19
Q608	D-20
Q609	F-8
Q610	F-8
Q611	F-8
Q612	F-8
Q613	F-9
Q614	F-18
Q615	E-18
Q701	F-15
Q702	H-15
Q703	H-15
Q704	G-14
Q705	G-17
Q706	G-17



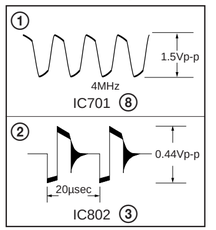
Note:
- ⟷ : parts extracted from the component side.
- △ : internal component.
- ▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

6-4. SCHEMATIC DIAGRAM • Refer to page 20 for IC Block Diagrams.



• Waveforms (PB mode)

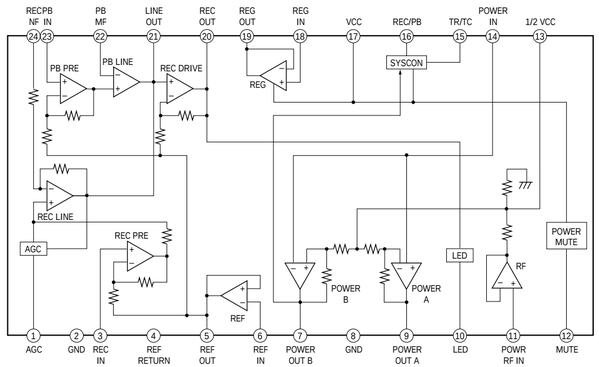


Note:

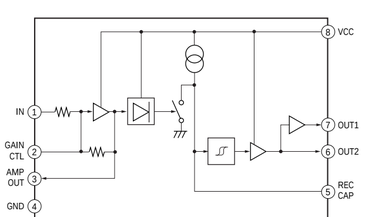
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : REC
  ( ) : PB
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ▷ : PB
  ▷▷ : REC

• IC Block Diagrams

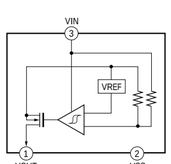
IC101 CXA1347N



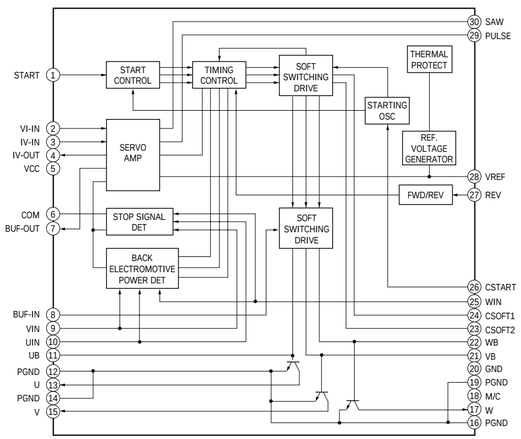
IC102 NJM2072M



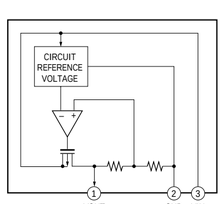
IC702 XC61AN2702MR



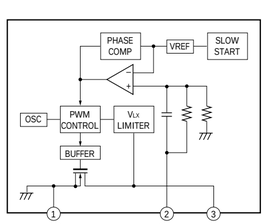
IC601 TLP326ADB



IC801 S-81330HG



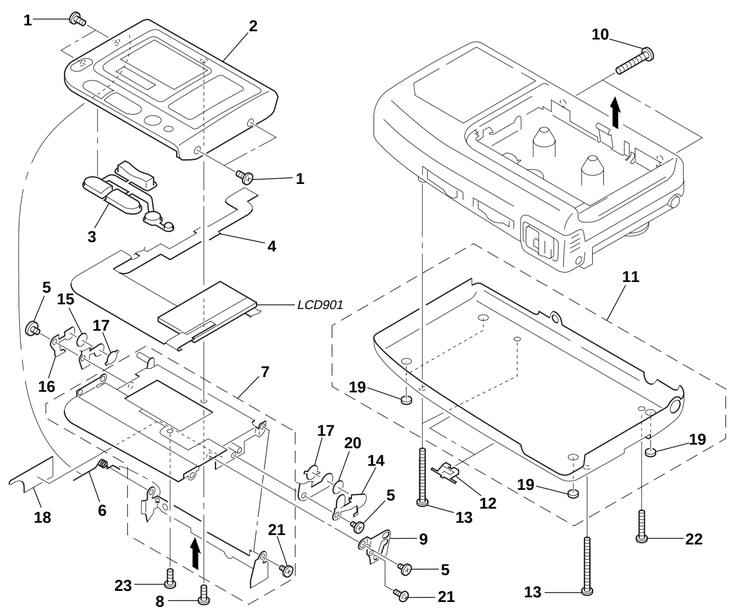
IC802 RH5RH381A-T1



SECTION 7
EXPLODED VIEWS

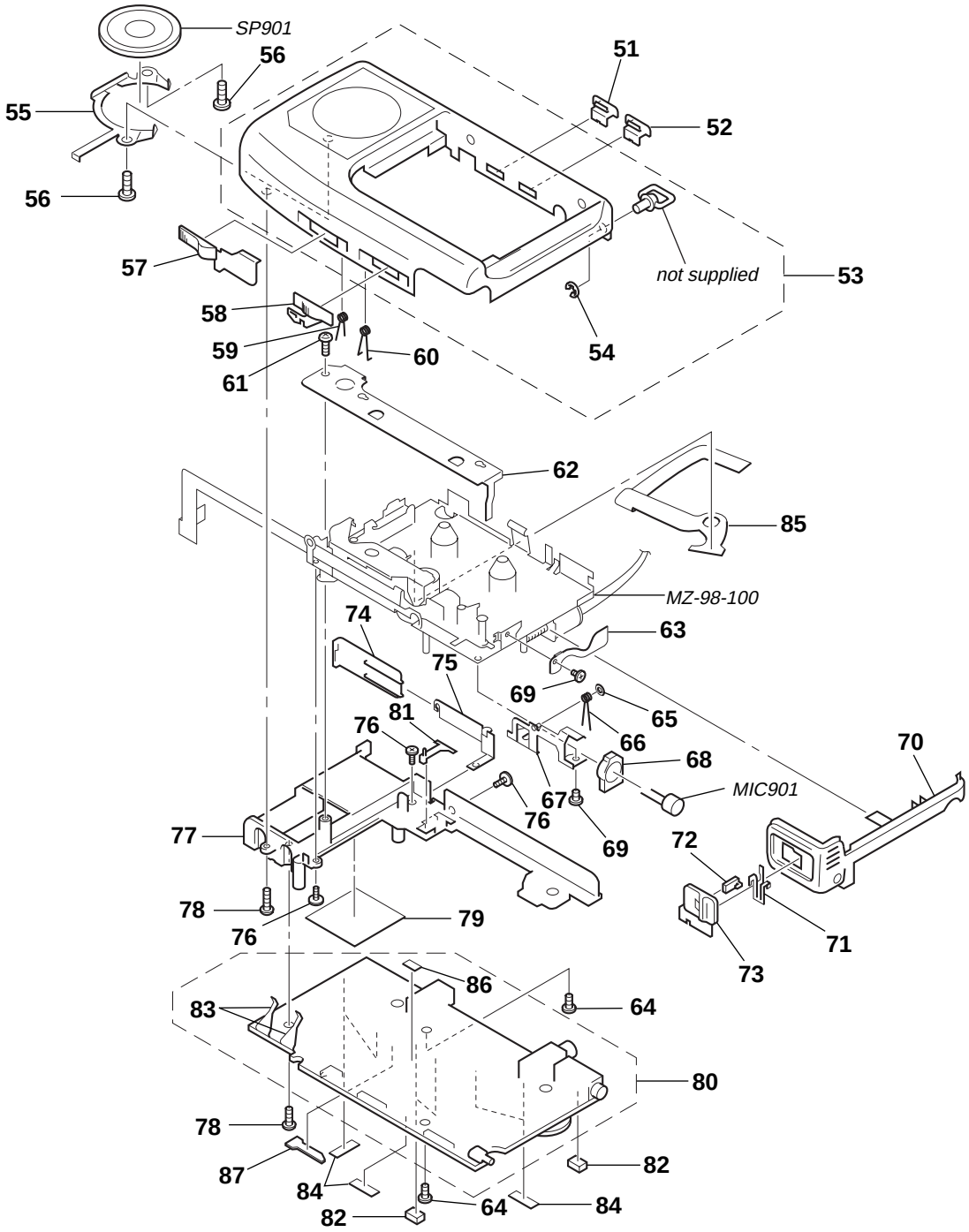
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials are given in the last of this parts list.

7-1. PANEL (LID) SECTION



Ref. No.	Part No.	Description	Remark
1	3-317-706-21	SCREW (M1.4)	
2	X-3376-990-1	PANEL (LID) ASSY	
3	3-033-909-01	BUTTON (PLAY,PAUSE,COUNTER RESET, EASY SEARCH)	
4	1-418-286-11	SWITCH UNIT	
5	3-349-825-01	SCREW	
6	3-033-918-01	SPRING (HOLDER)	
7	X-3376-991-1	HOLDER ASSY	
8	4-992-624-11	SCREW (1.4X3)	
9	3-033-919-01	BRACKET (CASSETTE UP)	
10	3-345-648-07	SCREW (M1.4), TOOTHED LOCK	
11	X-3376-998-1	PANEL (REAR) ASSY	
12	3-033-874-01	KNOB (SENS)	
13	3-349-224-01	SCREW (B1.7X18) (G), TAPPING	
14	3-007-638-01	SPRING (DETECTION A), LEAF	
15	3-015-786-11	SHEET (CONTACT)	
16	3-007-639-01	SPRING (DETECTION B), LEAF	
17	3-007-641-01	CONTACT (RUBBER)	
18	3-015-787-01	SHEET (CASSETTE HOLDER)	
19	3-331-603-01	FOOT	
20	3-015-786-21	SHEET (CONTACT)	
21	7-627-850-47	SCREW, PRECISION +P 1.4X1.6	
22	3-704-197-82	SCREW (M1.4X5.0), LOCKING	
23	4-992-624-21	SCREW (1.4X3.5)	
LCD901	1-803-509-11	DISPLAY PANEL, LIQUID CRYSTAL	

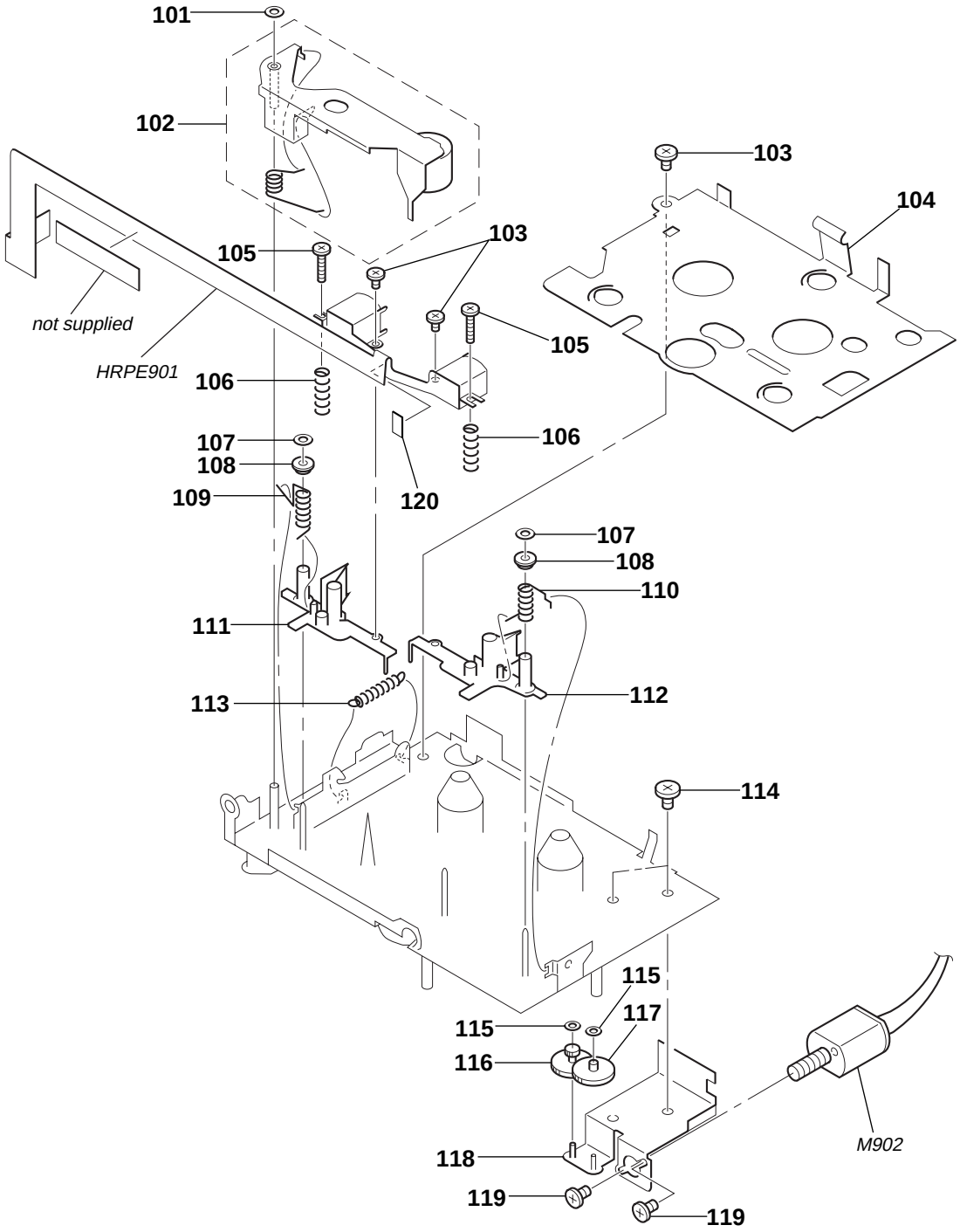
7-2. MAIN BOARD SECTION



Ref. No.	Part No.	Description	Remark
51	3-033-873-01	KNOB (F.PB) (BLACK)	
52	3-033-873-11	KNOB (F.PB) (GRAY)	
53	X-3376-993-1	PANEL (FRONT) ASSY	
54	7-624-102-04	STOP RING 1.5, TYPE -E	
* 55	3-033-877-01	BRACKET (SPEAKER)	
56	3-318-382-01	SCREW (1.7X3), TAPPING	
57	3-033-864-01	KNOB (EJECT)	
58	3-033-863-01	KNOB (FR)	
59	3-033-866-01	SPRING (EJECT)	
60	3-033-865-01	SPRING (FR)	
61	3-893-942-31	SCREW (1.7X4), TAPPING (B)	
62	3-033-883-01	COVER (HD)	
63	X-3376-995-1	LEVER (C HOLDER) ASSY	
64	7-627-850-47	SCREW, PRECISION +P 1.4X1.6	
65	3-321-483-11	RING, RETAINING	
66	3-033-885-01	SPRING (REC)	
67	X-3377-003-1	BRACKET (MICROPHONE) ASSY	
68	3-033-891-01	CUSHION (MICROPHONE)	
69	3-349-825-01	SCREW	
70	3-033-867-01	CABINET (MIC)	

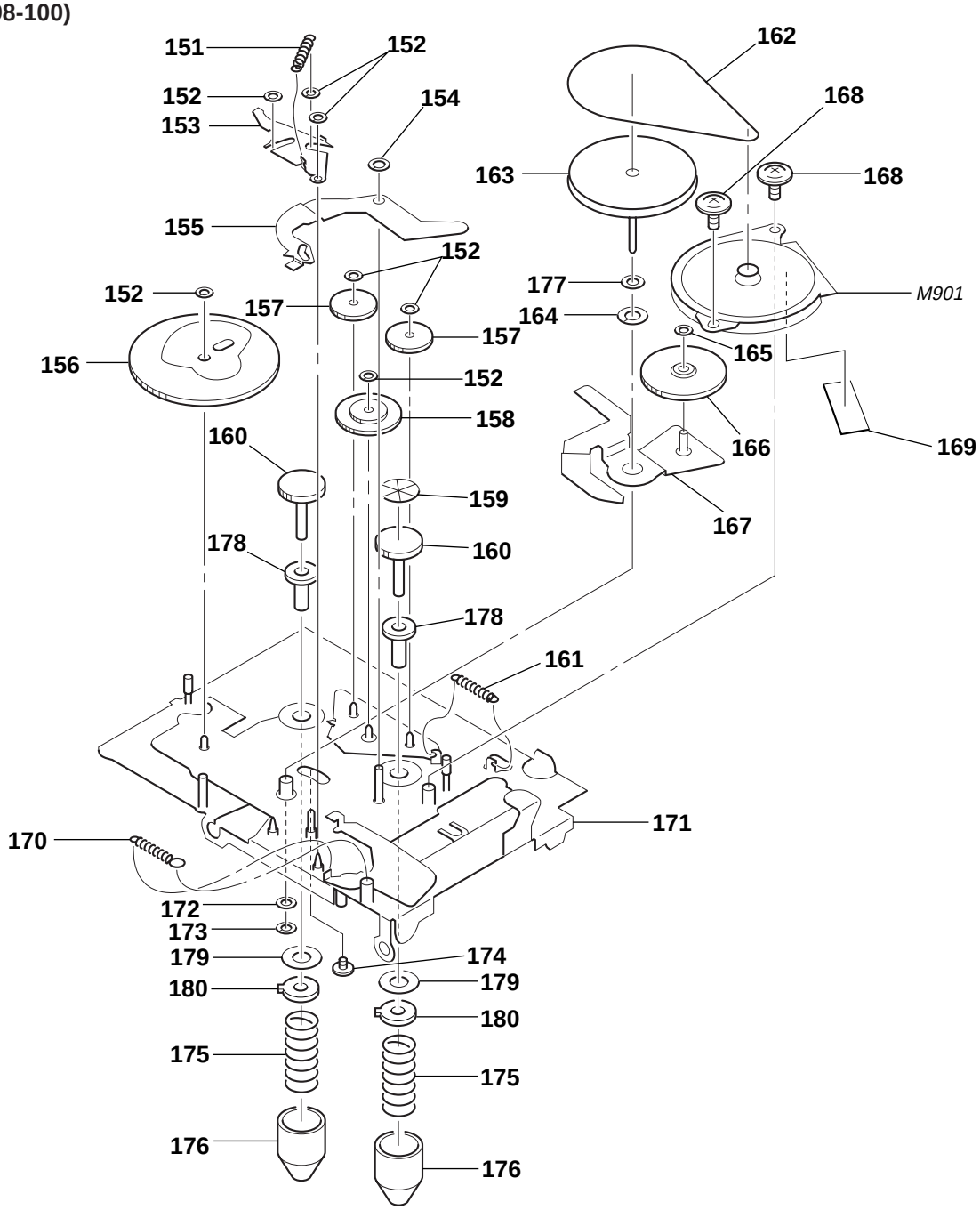
Ref. No.	Part No.	Description	Remark
71	3-033-870-01	SPRING (REC), LEAF	
72	3-033-869-01	BUTTON (REC)	
73	3-033-868-01	KNOB (REC)	
74	3-033-875-01	LID, BATTERY CASE	
75	X-3376-996-1	TERMINAL BOARD ASSY	
76	3-349-825-83	SCREW	
77	3-033-880-01	FRAME	
78	3-318-203-61	SCREW (B1.7X4), TAPPING	
79	4-858-803-01	ABSORBENT, ACOUSTIC, REFLECTION	
80	A-3021-187-A	MAIN BOARD, COMPLETE	
81	3-033-881-01	LEVER (DETECTION)	
82	3-896-879-01	SPACER (BATTERY)	
83	3-033-894-01	TERMINAL BOARD	
84	3-831-441-99	SPACER	
85	1-673-129-11	MOTOR FLEXIBLE BOARD	
86	3-327-119-01	SHEET, AZIMUTH	
87	A-3061-971-A	DETECTION BOARD, COMPLETE	
MIC901	1-542-170-11	MICROPHONE, ELECTRET CONDENSER (MIC)	
SP901	1-529-276-11	SPEAKER (2.8cm)	

7-3. MECHANISM SECTION (1)
(MZ-98-100)



Ref. No.	Part No.	Description	Remark
101	3-331-036-01	WASHER	
102	X-3376-302-1	PINCH LEVER (B) ASSY	
103	3-348-160-01	SCREW (M1.4X1.3), PRECISION PAN	
104	3-007-234-11	COVER, MD	
105	3-703-816-12	SCREW (M1.4X4.0), SPECIAL HEAD	
106	3-371-351-01	SPRING (AZIMUTH), COMPRESSION	
107	3-010-172-01	WASHER	
108	3-012-219-01	SPACER (H ARM)	
109	3-007-249-01	SPRING (H ARM R), TORSION	
110	3-007-248-01	SPRING (H ARM N), TORSION	
111	X-3377-459-1	ARM (R) ASSY, HEAD	
112	X-3377-458-1	ARM (N) ASSY, HEAD	
113	3-007-252-01	SPRING (LOCK PLATE), TENSION	
114	3-007-259-01	SCREW (M1.4)	
115	3-378-616-01	WASHER	
116	3-033-985-01	GEAR (MODE)	
117	3-033-984-01	GEAR (WORM WHEEL)	
* 118	X-3377-001-1	BRACKET ASSY, MODE MOTOR	
119	3-007-306-01	SCREW (M1.4)	
* 120	3-901-417-01	SPACER	
HRPE901	1-500-598-11	HEAD, MAGNETIC (REC/PB/ERASE)	
M902	1-763-281-11	MOTOR, DC (MODE) (including PULLEY)	

7-4. MECHANISM SECTION (2)
(MZ-98-100)



Ref. No.	Part No.	Description	Remark
151	3-007-247-01	SPRING (E ARM B), TENSION	
152	3-378-616-01	WASHER	
* 153	X-3372-816-1	ARM (B) ASSY, EJECT	
154	3-371-407-01	WASHER (P)	
* 155	X-3372-815-1	ARM (A) ASSY, EJECT	
156	3-007-220-03	GEAR, CAM	
157	3-007-189-01	GEAR (TU-B)	
158	3-007-188-01	GEAR (TU-A)	
159	3-007-239-01	REFLECTOR	
160	3-007-190-01	GEAR (REEL)	
161	3-007-251-01	SPRING (TU ARM), TENSION	
162	3-033-896-01	BELT (CAPSTAN)	
163	X-3376-999-1	FLYWHEEL ASSY	
164	3-328-432-01	WASHER, STOPPER	
165	3-331-007-11	WASHER	
166	X-3377-408-1	GEAR ASSY, LIMITER	

Ref. No.	Part No.	Description	Remark
* 167	X-3377-409-1	ARM ASSY, LIMITER	
168	3-338-625-51	SCREW, PRECISION WASHER HEAD	
169	3-014-475-01	SHEET (MOTOR)	
170	3-007-250-01	SPRING (PRESS ARM), TENSION	
171	X-3377-000-1	CHASSIS ASSY, MECHANICAL	
172	3-350-989-01	WASHER	
173	3-348-993-01	WASHER	
174	3-007-259-01	SCREW (M1.4)	
175	3-036-907-01	SPRING (B.T), COMPRESSION	
176	3-010-615-02	CLAW, REEL	
177	3-321-394-41	WASHER	
178	3-007-198-01	BEARING (REEL)	
179	3-037-763-01	WASHER	
180	3-037-493-01	WASHER	
M901	1-763-280-11	MOTOR, DC (CAPSTAN/REEL) (including PULLEY)	

DETECTION **MAIN**

SECTION 8
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

When indicating parts by reference number, please include the board.

- Abbreviation
  JE : Tourist model
  CND : Canadian model

Ref. No.	Part No.	Description			Remark
	A-3061-971-A	DETECTION BOARD, COMPLETE			
		**********			
		< DIODE >			
D901	8-719-404-50	DIODE MA111-TX			
D902	8-719-404-50	DIODE MA111-TX			
		< TRANSISTOR >			
Q901	8-729-039-86	TRANSISTOR FMMT717TA			
Q902	8-729-402-93	TRANSISTOR UN5214-TX			
		< RESISTOR >			
R901	1-216-845-11	METAL CHIP	100K	5%	1/16W
R902	1-216-821-11	METAL CHIP	1K	5%	1/16W
**********					
	A-3021-187-A	MAIN BOARD, COMPLETE			
		**********			
	3-033-894-01	TERMINAL BOARD			
	3-327-119-01	SHEET, AZIMUTH			
		< CAPACITOR >			
C101	1-164-931-11	CERAMIC CHIP	100PF	10%	16V
C102	1-164-931-11	CERAMIC CHIP	100PF	10%	16V
C103	1-164-931-11	CERAMIC CHIP	100PF	10%	16V
C104	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C105	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C106	1-115-156-11	CERAMIC CHIP	1uF		10V
C107	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C108	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C109	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C110	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C111	1-117-721-11	CERAMIC CHIP	4700PF	5%	25V
C112	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C113	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C114	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C115	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C116	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C117	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C118	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C119	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C120	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C121	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C122	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C123	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C124	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C125	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C126	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C127	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C128	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C129	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C130	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C131	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C132	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C133	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C134	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C135	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C136	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C137	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C138	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C139	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C140	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C141	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C142	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C143	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C144	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C145	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C146	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C147	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C148	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C149	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C150	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C151	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C152	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C153	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C154	1-115-156-11	CERAMIC CHIP	1uF		10V
C602	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C603	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C604	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C605	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C606	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C607	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C609	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C610	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C611	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C612	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C613	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C614	1-135-177-21	TANTALUM CHIP	1uF	20%	20V

Ref. No.	Part No.	Description			Remark
C615	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
C701	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C702	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C703	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C704	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C705	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C706	1-115-156-11	CERAMIC CHIP	1uF		10V
C707	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C708	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C709	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C710	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C711	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C712	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C713	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C714	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C801	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C802	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C803	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C804	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C805	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
		< CONNECTOR >			
CN101	1-778-711-11	CONNECTOR, FFC/FPC (ZIF) 5P			
* CN102	1-778-159-21	CONNECTOR, FFC/FPC (ZIF) 11P			
		< DIODE >			
D101	8-719-422-91	DIODE MA8091			
D701	8-719-420-51	DIODE MA729			
D801	8-719-049-09	DIODE 1SS367-T3SONY			
D901	8-719-066-69	LED BR2434D (REC)			
		< IC >			
IC101	8-752-036-38	IC CXA1347N			
IC102	8-759-701-51	IC NJM2072M			
IC601	8-759-996-13	IC TLP326ADB			
IC701	8-759-574-15	IC MB89133LPFV-G-488BND			
IC702	8-759-289-76	IC XC61AN2702MR			
IC801	8-759-065-94	IC S-81330HG-S			
IC802	8-759-099-21	IC RH5RH381A-T1			
		< JACK >			
J101	1-573-014-31	JACK (MIC (PLUG IN POWER))			
J102	1-691-737-21	JACK (SMALL TYPE) (EAR)			
J701	1-580-372-41	JACK, DC (POLARITY UNIFIED TYPE)			(DC IN 3V)
		< COIL >			
L101	1-412-011-31	INDUCTOR CHIP 27uH			
L801	1-412-030-11	INDUCTOR CHIP 22uH			
L802	1-414-764-11	INDUCTOR 120uH			
		< PHOTO REFLECTOR >			
PH701	8-749-923-97	PHOTO REFLECTOR GP2S40			

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q101	8-729-429-74	TRANSISTOR 2SC3929			
Q102	8-729-420-24	TRANSISTOR 2SB1218A-QRS			
Q103	8-729-403-45	TRANSISTOR XN1115			
Q104	8-729-028-26	FET 2SK1829(TE85L)			
Q105	8-729-026-30	FET 2SJ346-TE85L			
Q106	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q107	8-729-422-41	TRANSISTOR XN1114			
Q108	8-729-425-18	TRANSISTOR XN4504			
Q109	8-729-420-50	TRANSISTOR UN5215			
Q111	8-729-400-56	TRANSISTOR 2SD1328-T			
Q112	8-729-800-71	TRANSISTOR 2SB815B7-TB			
Q113	8-729-403-45	TRANSISTOR XN1115			
Q114	8-729-402-96	TRANSISTOR UN5114			
Q115	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q116	8-729-400-56	TRANSISTOR 2SD1328-T			
Q117	8-729-800-71	TRANSISTOR 2SB815B7-TB			
Q118	8-729-420-50	TRANSISTOR UN5215			
Q119	8-729-422-39	TRANSISTOR XN4404			
Q120	8-729-402-13	TRANSISTOR XN1501			
Q121	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q122	8-729-402-93	TRANSISTOR UN5214-TX			
Q123	8-729-039-86	TRANSISTOR FMMT717TA			
Q124	8-729-420-50	TRANSISTOR UN5215			
Q125	8-729-028-26	FET 2SK1829(TE85L)			
Q126	8-729-420-50	TRANSISTOR UN5215			
Q127	8-729-402-96	TRANSISTOR UN5114			
Q128	8-729-425-18	TRANSISTOR XN4504			
Q601	8-729-422-41	TRANSISTOR XN1114			
Q602	8-729-028-26	FET 2SK1829(TE85L)			
Q603	8-729-028-26	FET 2SK1829(TE85L)			
Q604	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q605	8-729-039-86	TRANSISTOR FMMT717TA			
Q606	8-729-039-86	TRANSISTOR FMMT717TA			
Q607	8-729-039-86	TRANSISTOR FMMT717TA			
Q608	8-729-028-27	FET 2SK2009(TE85L)			
Q609	8-729-028-27	FET 2SK2009(TE85L)			
Q610	8-729-420-53	TRANSISTOR UN5115			
Q611	8-729-039-86	TRANSISTOR FMMT717TA			
Q612	8-729-402-13	TRANSISTOR XN1501			
Q613	8-729-028-27	FET 2SK2009(TE85L)			
Q614	8-729-420-16	TRANSISTOR XN1214			
Q615	8-729-420-50	TRANSISTOR UN5215			
Q701	8-729-420-50	TRANSISTOR UN5215			
Q702	8-729-026-30	FET 2SJ346-TE85L			
Q703	8-729-028-26	FET 2SK1829(TE85L)			
Q704	8-729-026-30	FET 2SJ346-TE85L			
Q705	8-729-420-24	TRANSISTOR 2SB1218A-QRS			
Q706	8-729-420-24	TRANSISTOR 2SB1218A-QRS			
		< RESISTOR >			
R101	1-218-953-11	RES,CHIP	1K	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remark
R102	1-218-977-11	RES,CHIP	100K	5%	1/16W
R103	1-218-969-11	RES,CHIP	22K	5%	1/16W
R104	1-218-969-11	RES,CHIP	22K	5%	1/16W
R105	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R106	1-218-977-11	RES,CHIP	100K	5%	1/16W
R107	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R108	1-218-953-11	RES,CHIP	1K	5%	1/16W
R109	1-218-953-11	RES,CHIP	1K	5%	1/16W
R110	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R111	1-218-953-11	RES,CHIP	1K	5%	1/16W
R112	1-218-953-11	RES,CHIP	1K	5%	1/16W
R113	1-218-977-11	RES,CHIP	100K	5%	1/16W
R114	1-218-969-11	RES,CHIP	22K	5%	1/16W
R115	1-218-965-11	RES,CHIP	10K	5%	1/16W
R116	1-218-965-11	RES,CHIP	10K	5%	1/16W
R117	1-218-973-11	RES,CHIP	47K	5%	1/16W
R118	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R119	1-218-931-11	RES,CHIP	15	5%	1/16W
R120	1-218-937-11	RES,CHIP	47	5%	1/16W
R121	1-218-953-11	RES,CHIP	1K	5%	1/16W
R122	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R123	1-218-945-11	RES,CHIP	220	5%	1/16W
R125	1-218-949-11	RES,CHIP	470	5%	1/16W
R126	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R127	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R128	1-218-977-11	RES,CHIP	100K	5%	1/16W
R129	1-218-967-11	RES,CHIP	15K	5%	1/16W
R130	1-216-792-11	METAL CHIP	3.9	5%	1/16W
R131	1-216-792-11	METAL CHIP	3.9	5%	1/16W
R132	1-218-977-11	RES,CHIP	100K	5%	1/16W
R133	1-218-977-11	RES,CHIP	100K	5%	1/16W
R134	1-218-983-11	RES,CHIP	330K	5%	1/16W
R135	1-218-953-11	RES,CHIP	1K	5%	1/16W
R137	1-218-949-11	RES,CHIP	470	5%	1/16W
R138	1-218-949-11	RES,CHIP	470	5%	1/16W
R139	1-218-973-11	RES,CHIP	47K	5%	1/16W
R140	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R141	1-218-965-11	RES,CHIP	10K	5%	1/16W
R142	1-218-953-11	RES,CHIP	1K	5%	1/16W
R143	1-218-973-11	RES,CHIP	47K	5%	1/16W
R144	1-218-941-11	RES,CHIP	100	5%	1/16W
R145	1-218-949-11	RES,CHIP	470	5%	1/16W
R146	1-218-949-11	RES,CHIP	470	5%	1/16W
R147	1-218-943-11	RES,CHIP	150	5%	1/16W
R148	1-218-973-11	RES,CHIP	47K	5%	1/16W
R149	1-218-953-11	RES,CHIP	1K	5%	1/16W
R150	1-218-953-11	RES,CHIP	1K	5%	1/16W
R151	1-218-973-11	RES,CHIP	47K	5%	1/16W
R152	1-218-977-11	RES,CHIP	100K	5%	1/16W
R153	1-218-977-11	RES,CHIP	100K	5%	1/16W
R154	1-218-965-11	RES,CHIP	10K	5%	1/16W
R155	1-218-941-11	RES,CHIP	100	5%	1/16W
R156	1-218-975-11	RES,CHIP	68K	5%	1/16W
R157	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R158	1-218-977-11	RES,CHIP	100K	5%	1/16W
R159	1-218-973-11	RES,CHIP	47K	5%	1/16W
R160	1-218-949-11	RES,CHIP	470	5%	1/16W
R161	1-216-801-11	METAL CHIP	22	5%	1/16W
R163	1-218-977-11	RES,CHIP	100K	5%	1/16W
R164	1-218-977-11	RES,CHIP	100K	5%	1/16W
R165	1-216-797-11	METAL CHIP	10	5%	1/16W
R166	1-218-983-11	RES,CHIP	330K	5%	1/16W
R167	1-218-969-11	RES,CHIP	22K	5%	1/16W
R168	1-218-969-11	RES,CHIP	22K	5%	1/16W
R169	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R601	1-220-803-11	RES,CHIP	4.7	5%	1/16W
R602	1-218-965-11	RES,CHIP	10K	5%	1/16W
R603	1-218-975-11	RES,CHIP	68K	5%	1/16W
R604	1-218-965-11	RES,CHIP	10K	5%	1/16W
R605	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R606	1-218-973-11	RES,CHIP	47K	5%	1/16W
R607	1-218-965-11	RES,CHIP	10K	5%	1/16W
R608	1-218-967-11	RES,CHIP	15K	5%	1/16W
R609	1-218-977-11	RES,CHIP	100K	5%	1/16W
R610	1-218-965-11	RES,CHIP	10K	5%	1/16W
R611	1-218-977-11	RES,CHIP	100K	5%	1/16W
R612	1-218-953-11	RES,CHIP	1K	5%	1/16W
R613	1-218-953-11	RES,CHIP	1K	5%	1/16W
R614	1-218-953-11	RES,CHIP	1K	5%	1/16W
R615	1-218-977-11	RES,CHIP	100K	5%	1/16W
R616	1-218-977-11	RES,CHIP	100K	5%	1/16W
R617	1-218-965-11	RES,CHIP	10K	5%	1/16W
R618	1-218-973-11	RES,CHIP	47K	5%	1/16W
R619	1-218-971-11	RES,CHIP	33K	5%	1/16W
R620	1-218-971-11	RES,CHIP	33K	5%	1/16W
R621	1-218-977-11	RES,CHIP	100K	5%	1/16W
R622	1-218-977-11	RES,CHIP	100K	5%	1/16W
R623	1-218-973-11	RES,CHIP	47K	5%	1/16W
R701	1-218-977-11	RES,CHIP	100K	5%	1/16W
R702	1-218-977-11	RES,CHIP	100K	5%	1/16W
R703	1-218-977-11	RES,CHIP	100K	5%	1/16W
R704	1-218-977-11	RES,CHIP	100K	5%	1/16W
R705	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R706	1-218-977-11	RES,CHIP	100K	5%	1/16W
R707	1-218-979-11	RES,CHIP	150K	5%	1/16W
R708	1-220-804-11	RES,CHIP	3.3M	5%	1/16W
R709	1-218-965-11	RES,CHIP	10K	5%	1/16W
R710	1-218-989-11	RES,CHIP	1M	5%	1/16W
R711	1-218-979-11	RES,CHIP	150K	5%	1/16W
R712	1-218-979-11	RES,CHIP	150K	5%	1/16W
R713	1-218-979-11	RES,CHIP	150K	5%	1/16W
R714	1-218-979-11	RES,CHIP	150K	5%	1/16W
R715	1-218-979-11	RES,CHIP	150K	5%	1/16W
R716	1-218-979-11	RES,CHIP	150K	5%	1/16W
R717	1-218-965-11	RES,CHIP	10K	5%	1/16W
R718	1-218-977-11	RES,CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R719	1-218-989-11	RES,CHIP	1M	5%	1/16W
R720	1-218-989-11	RES,CHIP	1M	5%	1/16W
R721	1-218-989-11	RES,CHIP	1M	5%	1/16W
R722	1-218-989-11	RES,CHIP	1M	5%	1/16W
R724	1-218-989-11	RES,CHIP	1M	5%	1/16W
R726	1-208-947-11	RES,CHIP	330K	0.50%	1/16W
R727	1-208-947-11	RES,CHIP	330K	0.50%	1/16W
R728	1-208-935-11	RES,CHIP	100K	0.50%	1/16W
R729	1-208-935-11	RES,CHIP	100K	0.50%	1/16W
R730	1-208-699-11	RES,CHIP	4.7K	0.50%	1/16W
R731	1-208-699-11	RES,CHIP	4.7K	0.50%	1/16W
R732	1-208-675-11	RES,CHIP	470	0.50%	1/16W
R733	1-208-679-11	RES,CHIP	680	0.50%	1/16W
R734	1-208-683-11	RES,CHIP	1K	0.50%	1/16W
R735	1-208-683-11	RES,CHIP	1K	0.50%	1/16W
		< VARIABLE RESISTOR >			
RV101	1-225-502-11	RES, VAR, CARBON 10K/10K (VOL)			
RV601	1-241-478-11	RES, ADJ, CERMET 10K			
RV602	1-241-478-11	RES, ADJ, CERMET 10K			
		< SWITCH >			
S101	1-571-277-51	SWITCH, SLIDE (TAPE SPEED)			
S102	1-572-922-11	SWITCH, SLIDE (MIC SENS)			
S103	1-572-922-11	SWITCH, SLIDE (V•O•R)			
S701	1-771-628-11	SWITCH, DETECTION (MODE SELECT)			
S702	1-572-922-11	SWITCH, SLIDE (FAST PB)			
S703	1-762-835-11	SWITCH, PUSH (1 KEY) (TAPE DET)			
S704	1-771-483-41	SWITCH, PUSH (1 KEY) (HOLD)			
S705	1-771-630-21	SWITCH, SLIDE (REC PAUSE/REC)			
S706	1-771-630-21	SWITCH, SLIDE (FF/CUE•REW/REVIEW)			
		< TRANSFORMER >			
T101	1-429-933-11	TRANSFORMER, BIAS OSCILLATION			
		< VIBRATOR >			
X701	1-767-359-11	VIBRATOR, CERAMIC (4MHz)			
**********					
		MISCELLANEOUS			
		**********			
4	1-418-286-11	SWITCH UNIT			
85	1-673-129-11	MOTOR FLEXIBLE BOARD			
HRPE901	1-500-598-11	HEAD, MAGNETIC (REC/PB/ERASE)			
LCD901	1-803-509-11	DISPLAY PANEL, LIQUID CRYSTAL			
M901	1-763-280-11	MOTOR, DC (CAPSTAN/REEL) (including PULLEY)			
M902	1-763-281-11	MOTOR, DC (MODE) (including PULLEY)			
MIC901	1-542-170-11	MICROPHONE, ELECTRET CONDENSER (MIC)			
SP901	1-529-276-11	SPEAKER (2.8cm)			
**********					

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-542-268-12	MICROPHONE, ELECTRET CONDENSER (ECM-J805)	
	3-033-886-01	CASE, CARRYING	
	3-349-265-01	STRAP, HAND	
	3-865-293-01	MANUAL, INSTRUCTION (JAPANESE) (JE)	
	3-865-293-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH, ITALIAN) (CND,AEP,E)	
	3-865-293-21	MANUAL, INSTRUCTION (GERMAN,SPANISH, PORTUGUESE) (AEP,E)	
	3-865-293-31	MANUAL, INSTRUCTION (DUTCH,SWEDISH, FINNISH) (AEP)	
	3-865-293-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE,KOREAN) (JE)	
	3-865-293-51	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN, SIMPLIFIED CHINESE) (AEP,JE)	
	3-865-293-61	MANUAL, INSTRUCTION (ENGLISH) (US)	
	8-952-399-90	HEADPHONE, STEREO MDR-E123 SET	

9-926-967-11

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M-98V

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model
Tourist Model

SUPPLEMENT-1

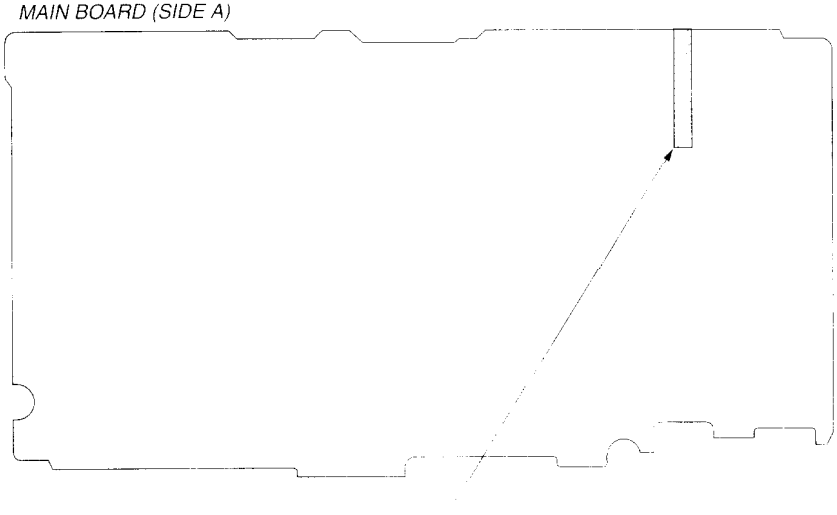
File this supplement with the service manual.

Subject : 1. Change of Main Board
2. Corrections of Exploded Views and Accessories & Packing Materials.

(ECN-MTA00150)

This Supplement-1 for service manual contains the new type of Main board.
For other information, see the released service manual (9-926-967-11).
When performing service and inspection, check the suffix of the part number of the main board.

MAIN BOARD (SIDE A)



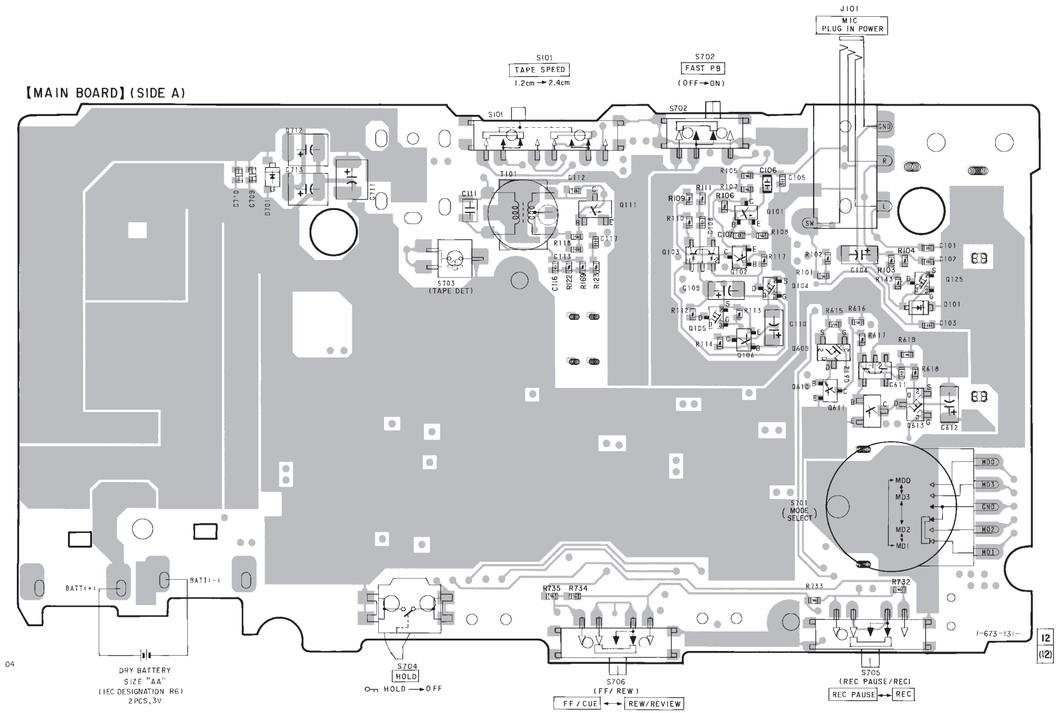
MAIN Board Part No.
Former: 1-673-131-11
New 1-673-131-12

1. PRINTED WIRING BOARD

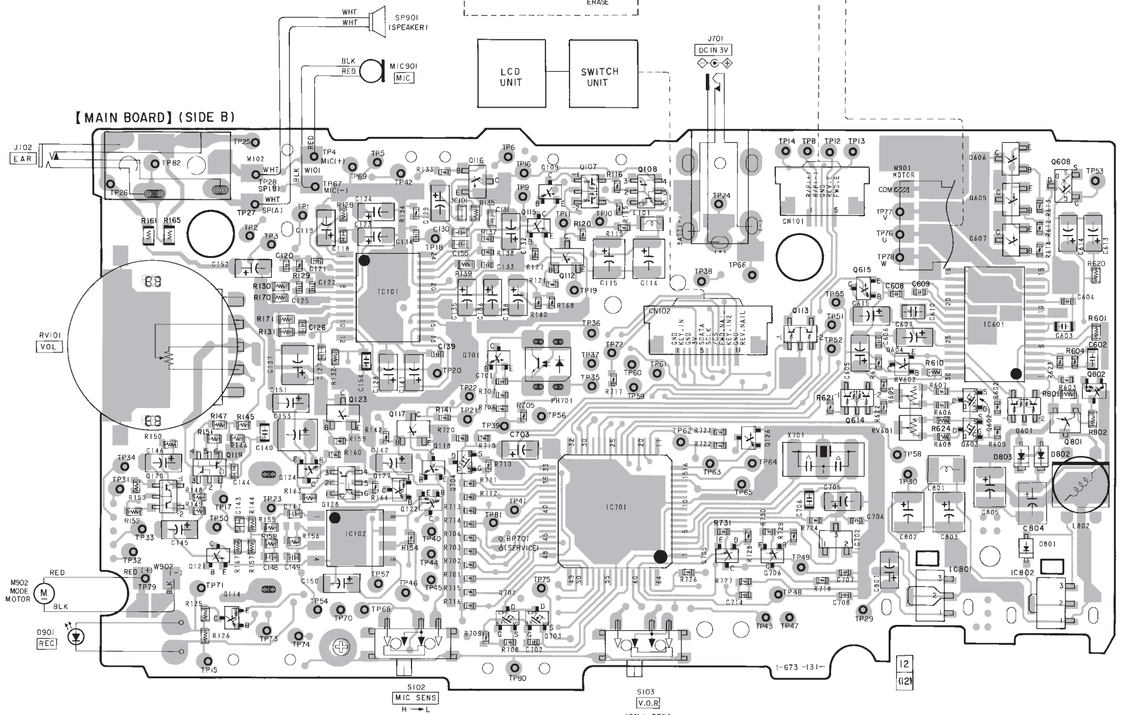
• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	E-9	IC701	G-16	Q104	E-8	Q115	E-15	Q125	E-9	Q607	D-19	Q702	H-15
D701	D-3	IC702	G-18	Q105	E-7	Q116	D-15	Q126	F-17	Q608	D-20	Q703	H-15
D801	G-19	IC801	H-19	Q106	F-7	Q117	F-14	Q127	G-14	Q609	F-8	Q704	G-14
D802	F-20	IC802	G-19	Q107	D-16	Q118	F-14	Q128	G-13	Q610	F-8	Q705	G-17
D803	F-19			Q108	D-16	Q119	F-12	Q601	F-19	Q611	F-8	Q706	G-17
D901	H-11	PH701	F-15	Q109	D-15	Q120	G-12	Q602	F-19	Q612	F-8	Q801	F-20
				Q111	D-6	Q121	G-12	Q603	F-19	Q613	F-9	Q802	F-20
IC101	E-14	Q101	D-8	Q112	E-15	Q122	G-14	Q604	E-18	Q614	F-18		
IC102	G-14	Q102	E-7	Q113	E-17	Q123	F-14	Q605	D-19	Q615	E-18		
IC601	E-19	Q103	E-7	Q114	H-12	Q124	G-13	Q606	D-19	Q701	F-15		

【MAIN BOARD】(SIDE A)



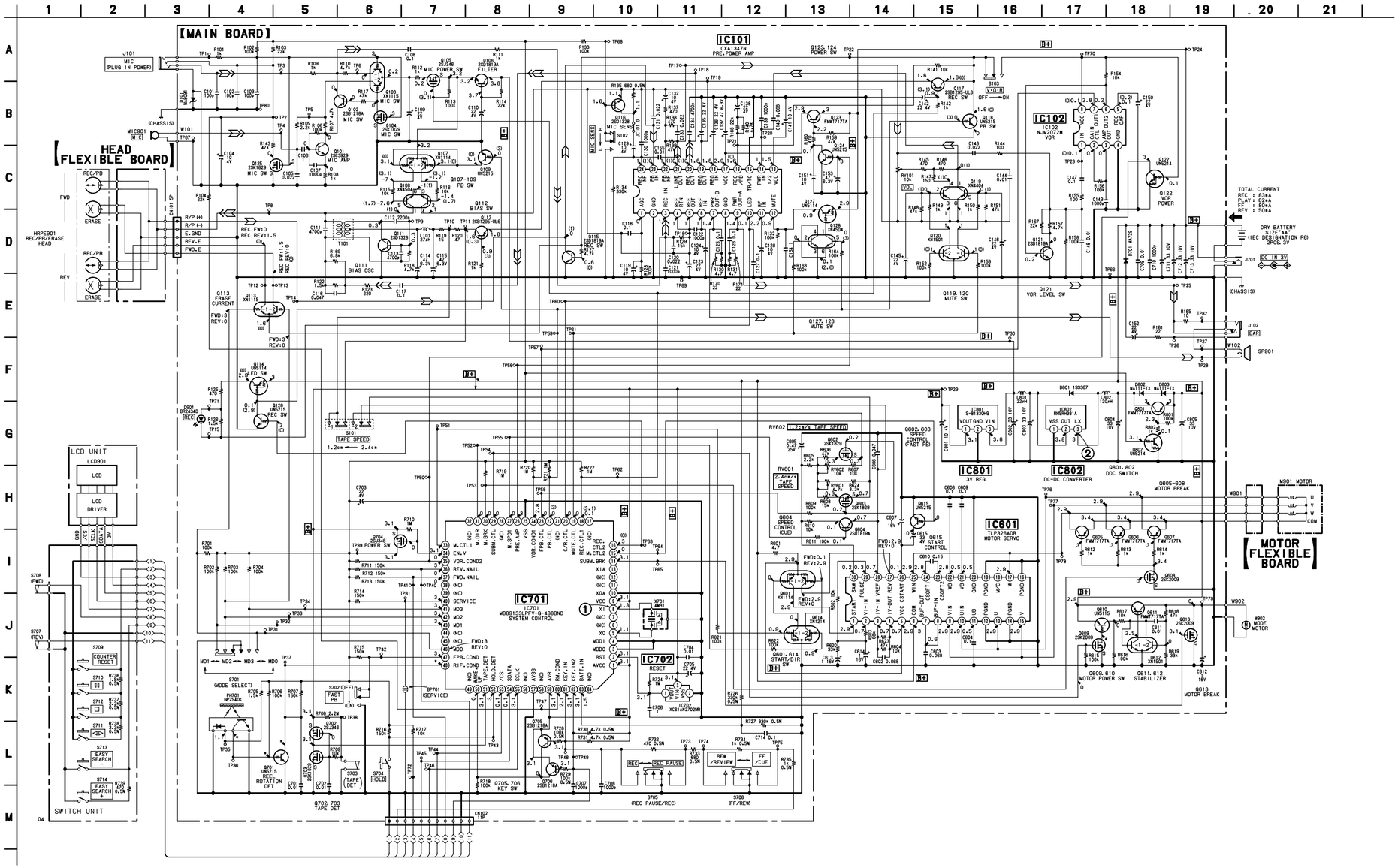
【MAIN BOARD】(SIDE B)



Note:
- ○——— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

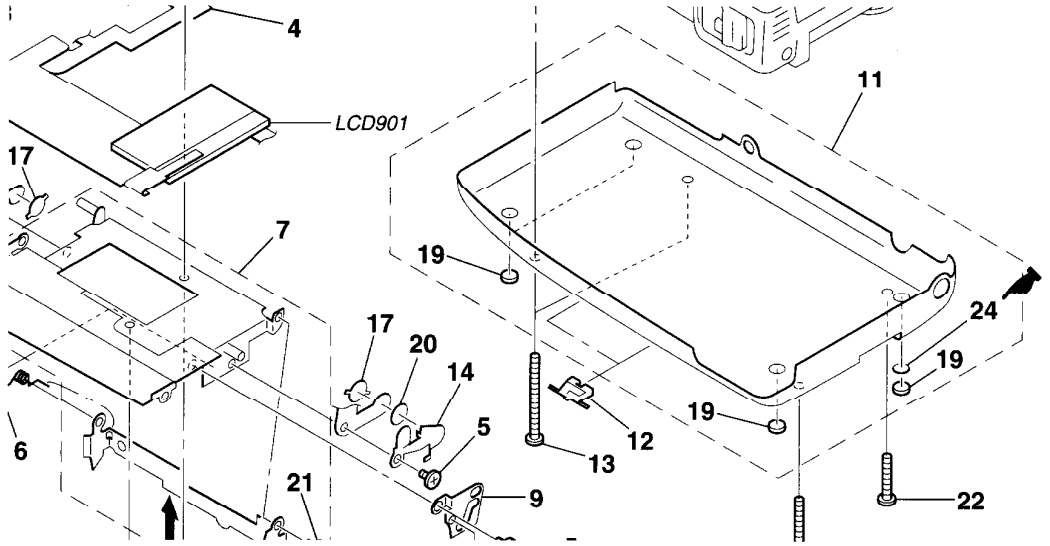
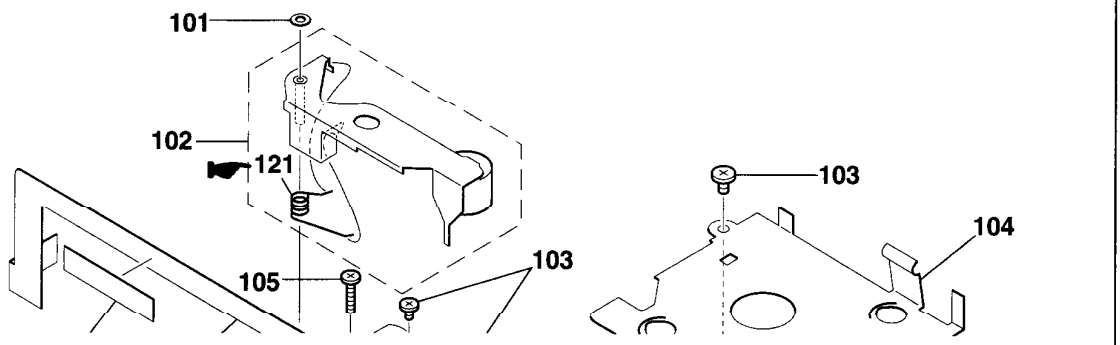
Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

2. SCHEMATIC DIAGRAM


【MAIN BOARD】
【HEAD FLEXIBLE BOARD】
【MOTOR FLEXIBLE BOARD】
IC101 CXA1347N PRE,POWER AMP
IC102 NJW2072M VOR
IC701 M38913GLPFV-B-488BND SYSTEM CONTROL
IC702 RESET
IC801 3V REG
IC802 DC-DC CONVERTER
IC601 TLP326ADE MOTOR SERVO
LCD UNIT
SWITCH UNIT
HRPE001 REC/PB/ERASE HEAD
J101 MIC (PLUG IN POWER)
J701 DC IN 3V
J102 EAR
SP901
W101 MIC001 MIC
W102
W901
W902
M901 MOTOR
M902 MODE MOTOR
TOTAL CURRENT REC : 83mA PLAY : 82mA FF : 80mA REV : 50mA
DRY BATTERY SIZE:AA' (IEC DESIGNATION R6) 2PCS 3V
Q103 MIC SW
Q104 MIC SW
Q105 MIC POWER SW
Q106 MIC SW
Q107-109 PB SW
Q110 MIC SW
Q111 BIAS OSC
Q112 BIAS SW
Q113 ERASE CURRENT
Q114 LED SW
Q115 REC SW
Q116 REC SW
Q117 REC SW
Q118 PB SW
Q119,120 MUTE SW
Q121 VOR LEVEL SW
Q122 VOR POWER
Q123,124 POWER SW
Q125 MIC SW
Q126 MIC SW
Q127,128 MUTE SW
Q601,602 SPEED CONTROL (FAST PB)
Q603 SPEED CONTROL (CUE)
Q604 SPEED CONTROL (CUE)
Q605-608 MOTOR BREAK
Q609,610 MOTOR POWER SW
Q611,612 STABILIZER
Q613 MOTOR BREAK
Q614 START/DIR SW
Q615 START CONTROL
Q801,802 DDC SWITCH
D801 1SS367
D802,803 MA111-TX
D804 MA728
D805 MA111-TX
D806 MA728
D807 MA111-TX
D808 MA728
D809 MA111-TX
D810 MA728
D811 MA111-TX
D812 MA728
D813 MA111-TX
D814 MA728
D815 MA111-TX
D816 MA728
D817 MA111-TX
D818 MA728
D819 MA111-TX
D820 MA728
D821 MA111-TX
D822 MA111-TX
D823 MA111-TX
D824 MA111-TX
D825 MA111-TX
D826 MA111-TX
D827 MA111-TX
D828 MA111-TX
D829 MA111-TX
D830 MA111-TX
D831 MA111-TX
D832 MA111-TX
D833 MA111-TX
D834 MA111-TX
D835 MA111-TX
D836 MA111-TX
D837 MA111-TX
D838 MA111-TX
D839 MA111-TX
D840 MA111-TX

3. Corrections

• Exploded Views and Accessories & Packing Materials
☛ : indicates corrected portion.

<table>
<tr><th>Page</th><th>INCORRECT</th><th>CORRECT</th></tr>
<tr><td>22</td><td> 
</td><td></td></tr>
<tr><td></td><td>Ref. No. Part No. Description Remark
24 ————</td><td>Part No. Description Remark
3-037-952-01 SPACER</td></tr>
<tr><td>23</td><td>87 A-3061-971-A DETECTION BOARD, COMPLETE</td><td>————</td></tr>
<tr><td>24</td><td> 
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<tr><td></td><td>102 X-3376-302-1 PINCH LEVER (B) ASSY
121 not supplied</td><td>X-3377-410-1 LEVER (B) ASSY, PINCH
3-036-321-01 SPRING (PINCH PRESS), TORSION</td></tr>
<tr><td>25</td><td>165 3-331-007-11 WASHER</td><td>3-038-163-11 WASHER</td></tr>
<tr><td>29</td><td>8-952-399-90 HEADPHONE, STEREO MDR-E123 SET</td><td>8-952-251-90 HEADPHONE MDR-E122 SET</td></tr>
</table>

4. ELECTRICAL PARTS LIST

MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts. so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example:
  uA.. : μA.. uPA.. : μPA..
  uPB.. : μPB.. uPC.. : μPC.. uPD.. : μPD..
- CAPACITORS
  uF : μF
- COILS
  uH : μH

When indicating parts by reference number, please include the board.

- Abbreviation
  JE : Tourist model
  CND : Canadian model

Ref. No.	Part No.	Description			Remark
	A-3021-187-A	MAIN BOARD, COMPLETE			
		**********			
	3-033-894-01	TERMINAL BOARD			
	3-327-119-01	SHEET, AZIMUTH			
		< CAPACITOR >			
C101	1-164-931-11	CERAMIC CHIP	100PF	10%	16V
C102	1-164-931-11	CERAMIC CHIP	100PF	10%	16V
C103	1-164-931-11	CERAMIC CHIP	100PF	10%	16V
C104	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C105	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C106	1-115-156-11	CERAMIC CHIP	1uF		10V
C107	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C108	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C109	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C110	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C111	1-117-721-11	CERAMIC CHIP	4700PF	5%	25V
C112	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C113	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C114	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C115	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C116	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C117	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C118	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C119	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C120	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C121	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C122	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C123	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C124	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C125	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C126	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C127	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C128	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C129	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C130	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C131	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C132	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C133	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C134	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C135	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C136	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C137	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C138	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C139	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C140	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C141	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C142	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C143	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C144	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C145	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C146	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C147	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C148	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C149	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C150	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C151	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C152	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C153	1-125-839-11	TANTAL. CHIP	47uF	20%	6.3V
C154	1-115-156-11	CERAMIC CHIP	1uF		10V
C155	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C602	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C603	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C604	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C605	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C606	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C607	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C609	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C610	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C611	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C612	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C613	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C614	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C615	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
C701	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C702	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C703	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C704	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C705	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C706	1-115-156-11	CERAMIC CHIP	1uF		10V
C707	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C708	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C709	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C710	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C711	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C712	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C713	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C714	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

MAIN

Ref. No.	Part No.	Description			Remark
C801	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C802	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C803	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C804	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C805	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
		< CONNECTOR >			
CN101	1-778-711-11	CONNECTOR, FFC/FPC (ZIF) 5P			
* CN102	1-778-159-21	CONNECTOR, FFC/FPC (ZIF) 11P			
		< DIODE >			
D101	8-719-422-91	DIODE MA8091			
D701	8-719-420-51	DIODE MA729			
D801	8-719-049-09	DIODE 1SS367-T3SONY			
D802	8-719-073-01	DIODE MA111-(K8).SO			
D803	8-719-073-01	DIODE MA111-(K8).SO			
D901	8-719-066-69	LED BR2434D (REC)			
		< IC >			
IC101	8-752-036-38	IC CXA1347N			
IC102	8-759-701-51	IC NJM2072M			
IC601	8-759-996-13	IC TLP326ADB			
IC701	8-759-574-15	IC MB89133LPFV-G-488BND			
IC702	8-759-289-76	IC XC61AN2702MR			
IC801	8-759-065-94	IC S-81330HG-S			
IC802	8-759-099-20	IC RH5RH381A-T1			
		< JACK >			
J101	1-573-014-31	JACK (MIC (PLUG IN POWER))			
J102	1-691-737-31	JACK (SMALL TYPE) (EAR)			
J701	1-580-372-41	JACK, DC (POLARITY UNIFIED TYPE)			(DC IN 3V)
		< JUMPER RESISTOR >			
JC101	1-218-990-11	SHORT	0		
		< COIL >			
L101	1-412-011-31	INDUCTOR CHIP	27uH		
L801	1-412-030-11	INDUCTOR CHIP	22uH		
L802	1-414-764-11	INDUCTOR	120uH		
		< PHOTO REFLECTOR >			
PH701	8-749-923-97	PHOTO REFLECTOR GP2S40			
		< TRANSISTOR >			
Q101	8-729-429-74	TRANSISTOR 2SC3929			
Q102	8-729-420-24	TRANSISTOR 2SB1218A-QRS			
Q103	8-729-403-45	TRANSISTOR XN1115			
Q104	8-729-028-26	FET 2SK1829(TE85L)			
Q105	8-729-026-30	FET 2SJ346-TE85L			
Q106	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q107	8-729-422-41	TRANSISTOR XN1114			

Ref. No.	Part No.	Description	Remark
Q108	8-729-425-18	TRANSISTOR XN4504	
Q109	8-729-420-50	TRANSISTOR UN5215	
Q111	8-729-400-56	TRANSISTOR 2SD1328-T	
Q112	8-729-800-71	TRANSISTOR 2SB815B7-TB	
Q113	8-729-403-45	TRANSISTOR XN1115	
Q114	8-729-402-96	TRANSISTOR UN5114	
Q115	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q116	8-729-400-56	TRANSISTOR 2SD1328-T	
Q117	8-729-800-71	TRANSISTOR 2SB815B7-TB	
Q118	8-729-420-50	TRANSISTOR UN5215	
Q119	8-729-422-39	TRANSISTOR XN4404	
Q120	8-729-402-13	TRANSISTOR XN1501	
Q121	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q122	8-729-402-93	TRANSISTOR UN5214-TX	
Q123	8-729-039-86	TRANSISTOR FMMT717TA	
Q124	8-729-420-50	TRANSISTOR UN5215	
Q125	8-729-028-26	FET 2SK1829(TE85L)	
Q126	8-729-420-50	TRANSISTOR UN5215	
Q127	8-729-402-96	TRANSISTOR UN5114	
Q128	8-729-425-18	TRANSISTOR XN4504	
Q601	8-729-422-41	TRANSISTOR XN1114	
Q602	8-729-028-26	FET 2SK1829(TE85L)	
Q603	8-729-028-26	FET 2SK1829(TE85L)	
Q604	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q605	8-729-039-86	TRANSISTOR FMMT717TA	
Q606	8-729-039-86	TRANSISTOR FMMT717TA	
Q607	8-729-039-86	TRANSISTOR FMMT717TA	
Q608	8-729-028-27	FET 2SK2009(TE85L)	
Q609	8-729-028-27	FET 2SK2009(TE85L)	
Q610	8-729-420-53	TRANSISTOR UN5115	
Q611	8-729-039-86	TRANSISTOR FMMT717TA	
Q612	8-729-402-13	TRANSISTOR XN1501	
Q613	8-729-028-27	FET 2SK2009(TE85L)	
Q614	8-729-420-16	TRANSISTOR XN1214	
Q615	8-729-420-50	TRANSISTOR UN5215	
Q701	8-729-420-50	TRANSISTOR UN5215	
Q702	8-729-026-30	FET 2SJ346-TE85L	
Q703	8-729-028-26	FET 2SK1829(TE85L)	
Q704	8-729-026-30	FET 2SJ346-TE85L	
Q705	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q706	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q801	8-729-039-86	TRANSISTOR FMMT717TA	
Q802	8-729-402-93	TRANSISTOR UN5214-TX	
		< RESISTOR >	
R101	1-218-953-11	RES,CHIP 1K	5% 1/16W
R102	1-218-977-11	RES,CHIP 100K	5% 1/16W
R103	1-218-969-11	RES,CHIP 22K	5% 1/16W
R104	1-218-969-11	RES,CHIP 22K	5% 1/16W
R105	1-218-957-11	RES,CHIP 2.2K	5% 1/16W
R106	1-218-977-11	RES,CHIP 100K	5% 1/16W
R107	1-218-961-11	RES,CHIP 4.7K	5% 1/16W
R108	1-218-953-11	RES,CHIP 1K	5% 1/16W

Ref. No.	Part No.	Description			Remark
R109	1-218-953-11	RES,CHIP	1K	5%	1/16W
R110	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R111	1-218-953-11	RES,CHIP	1K	5%	1/16W
R112	1-218-953-11	RES,CHIP	1K	5%	1/16W
R113	1-218-977-11	RES,CHIP	100K	5%	1/16W
R114	1-218-969-11	RES,CHIP	22K	5%	1/16W
R115	1-218-965-11	RES,CHIP	10K	5%	1/16W
R116	1-218-965-11	RES,CHIP	10K	5%	1/16W
R117	1-218-973-11	RES,CHIP	47K	5%	1/16W
R118	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R119	1-218-931-11	RES,CHIP	15	5%	1/16W
R120	1-218-937-11	RES,CHIP	47	5%	1/16W
R121	1-218-953-11	RES,CHIP	1K	5%	1/16W
R122	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R123	1-218-945-11	RES,CHIP	220	5%	1/16W
R125	1-218-949-11	RES,CHIP	470	5%	1/16W
R126	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R127	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R128	1-218-977-11	RES,CHIP	100K	5%	1/16W
R129	1-218-967-11	RES,CHIP	15K	5%	1/16W
R130	1-220-803-81	RES,CHIP	4.7	5%	1/16W
R131	1-220-803-81	RES,CHIP	4.7	5%	1/16W
R132	1-218-977-11	RES,CHIP	100K	5%	1/16W
R133	1-218-977-11	RES,CHIP	100K	5%	1/16W
R134	1-218-983-11	RES,CHIP	330K	5%	1/16W
R135	1-208-679-11	METAL CHIP	680	0.50%	1/16W
R137	1-218-949-11	RES,CHIP	470	5%	1/16W
R138	1-218-949-11	RES,CHIP	470	5%	1/16W
R139	1-218-973-11	RES,CHIP	47K	5%	1/16W
R140	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R141	1-218-965-11	RES,CHIP	10K	5%	1/16W
R142	1-218-953-11	RES,CHIP	1K	5%	1/16W
R143	1-218-973-11	RES,CHIP	47K	5%	1/16W
R144	1-218-941-11	RES,CHIP	100	5%	1/16W
R145	1-218-949-11	RES,CHIP	470	5%	1/16W
R146	1-218-949-11	RES,CHIP	470	5%	1/16W
R147	1-218-943-11	RES,CHIP	150	5%	1/16W
R148	1-218-973-11	RES,CHIP	47K	5%	1/16W
R149	1-218-953-11	RES,CHIP	1K	5%	1/16W
R150	1-218-953-11	RES,CHIP	1K	5%	1/16W
R151	1-218-973-11	RES,CHIP	47K	5%	1/16W
R152	1-218-977-11	RES,CHIP	100K	5%	1/16W
R153	1-218-977-11	RES,CHIP	100K	5%	1/16W
R154	1-218-965-11	RES,CHIP	10K	5%	1/16W
R155	1-218-941-11	RES,CHIP	100	5%	1/16W
R156	1-218-977-11	RES,CHIP	100K	5%	1/16W
R157	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R158	1-218-977-11	RES,CHIP	100K	5%	1/16W
R159	1-218-973-11	RES,CHIP	47K	5%	1/16W
R160	1-218-949-11	RES,CHIP	470	5%	1/16W
R161	1-216-801-11	METAL CHIP	22	5%	1/16W
R163	1-218-977-11	RES,CHIP	100K	5%	1/16W
R164	1-218-977-11	RES,CHIP	100K	5%	1/16W
R165	1-216-797-11	METAL CHIP	10	5%	1/16W
R167	1-218-969-11	RES,CHIP	22K	5%	1/16W
R168	1-218-969-11	RES,CHIP	22K	5%	1/16W
R169	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R170	1-218-933-11	RES,CHIP	22	5%	1/16W
R171	1-218-933-11	RES,CHIP	22	5%	1/16W
R601	1-220-803-81	RES,CHIP	4.7	5%	1/16W
R602	1-218-965-11	RES,CHIP	10K	5%	1/16W
R603	1-218-975-11	RES,CHIP	68K	5%	1/16W
R604	1-218-965-11	RES,CHIP	10K	5%	1/16W
R605	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R606	1-218-973-11	RES,CHIP	47K	5%	1/16W
R607	1-218-965-11	RES,CHIP	10K	5%	1/16W
R608	1-218-967-11	RES,CHIP	15K	5%	1/16W
R609	1-218-977-11	RES,CHIP	100K	5%	1/16W
R610	1-218-965-11	RES,CHIP	10K	5%	1/16W
R611	1-218-977-11	RES,CHIP	100K	5%	1/16W
R612	1-218-953-11	RES,CHIP	1K	5%	1/16W
R613	1-218-953-11	RES,CHIP	1K	5%	1/16W
R614	1-218-953-11	RES,CHIP	1K	5%	1/16W
R615	1-218-977-11	RES,CHIP	100K	5%	1/16W
R616	1-218-977-11	RES,CHIP	100K	5%	1/16W
R617	1-218-965-11	RES,CHIP	10K	5%	1/16W
R618	1-218-973-11	RES,CHIP	47K	5%	1/16W
R619	1-218-971-11	RES,CHIP	33K	5%	1/16W
R620	1-218-971-11	RES,CHIP	33K	5%	1/16W
R621	1-218-977-11	RES,CHIP	100K	5%	1/16W
R622	1-218-977-11	RES,CHIP	100K	5%	1/16W
R623	1-218-973-11	RES,CHIP	47K	5%	1/16W
R624	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R701	1-218-977-11	RES,CHIP	100K	5%	1/16W
R702	1-218-977-11	RES,CHIP	100K	5%	1/16W
R703	1-218-977-11	RES,CHIP	100K	5%	1/16W
R704	1-218-977-11	RES,CHIP	100K	5%	1/16W
R705	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R706	1-218-977-11	RES,CHIP	100K	5%	1/16W
R707	1-218-979-11	RES,CHIP	150K	5%	1/16W
R708	1-220-804-11	RES,CHIP	2.2M	5%	1/16W
R709	1-218-965-11	RES,CHIP	10K	5%	1/16W
R710	1-218-989-11	RES,CHIP	1M	5%	1/16W
R711	1-218-979-11	RES,CHIP	150K	5%	1/16W
R712	1-218-979-11	RES,CHIP	150K	5%	1/16W
R713	1-218-979-11	RES,CHIP	150K	5%	1/16W
R714	1-218-979-11	RES,CHIP	150K	5%	1/16W
R715	1-218-979-11	RES,CHIP	150K	5%	1/16W
R716	1-218-979-11	RES,CHIP	150K	5%	1/16W
R717	1-218-965-11	RES,CHIP	10K	5%	1/16W
R718	1-218-977-11	RES,CHIP	100K	5%	1/16W
R719	1-218-989-11	RES,CHIP	1M	5%	1/16W
R720	1-218-989-11	RES,CHIP	1M	5%	1/16W
R721	1-218-989-11	RES,CHIP	1M	5%	1/16W
R722	1-218-989-11	RES,CHIP	1M	5%	1/16W
R724	1-218-989-11	RES,CHIP	1M	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remark
R726	1-208-947-11	METAL CHIP	330K	0.50%	1/16W
R727	1-208-947-11	METAL CHIP	330K	0.50%	1/16W
R728	1-208-935-11	METAL CHIP	100K	0.50%	1/16W
R729	1-208-935-11	METAL CHIP	100K	0.50%	1/16W
R730	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W
R731	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W
R732	1-208-675-11	METAL CHIP	470	0.50%	1/16W
R733	1-208-679-11	METAL CHIP	680	0.50%	1/16W
R734	1-208-683-11	METAL CHIP	1K	0.50%	1/16W
R735	1-208-683-11	METAL CHIP	1K	0.50%	1/16W
R801	1-218-977-11	RES,CHIP	100K	5%	1/16W
R802	1-218-953-11	RES,CHIP	1K	5%	1/16W
		< VARIABLE RESISTOR >			
RV101	1-225-502-11	RES, VAR, CARBON 10K/10K (VOL)			
RV601	1-241-477-11	RES, ADJ, CERMET 4.7K			
RV602	1-241-478-11	RES, ADJ, CERMET 10K			
		< SWITCH >			
S101	1-571-277-51	SWITCH, SLIDE (TAPE SPEED)			
S102	1-572-922-11	SWITCH, SLIDE (MIC SENS)			
S103	1-572-922-11	SWITCH, SLIDE (V•O•R)			
S701	1-771-628-11	SWITCH, DETECTION (MODE SELECT)			
S702	1-572-922-11	SWITCH, SLIDE (FAST PB)			
S703	1-762-835-11	SWITCH, PUSH (1 KEY) (TAPE DET)			
S704	1-771-483-41	SWITCH, PUSH (1 KEY) (HOLD)			
S705	1-771-630-21	SWITCH, SLIDE (REC PAUSE/REC)			
S706	1-771-630-21	SWITCH, SLIDE (FF/CUE•REW/REVIEW)			
		< TRANSFORMER >			
T101	1-429-933-11	TRANSFORMER, BIAS OSCILLATION			
		< VIBRATOR >			
X701	1-767-359-11	VIBRATOR, CERAMIC (4MHz)			

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